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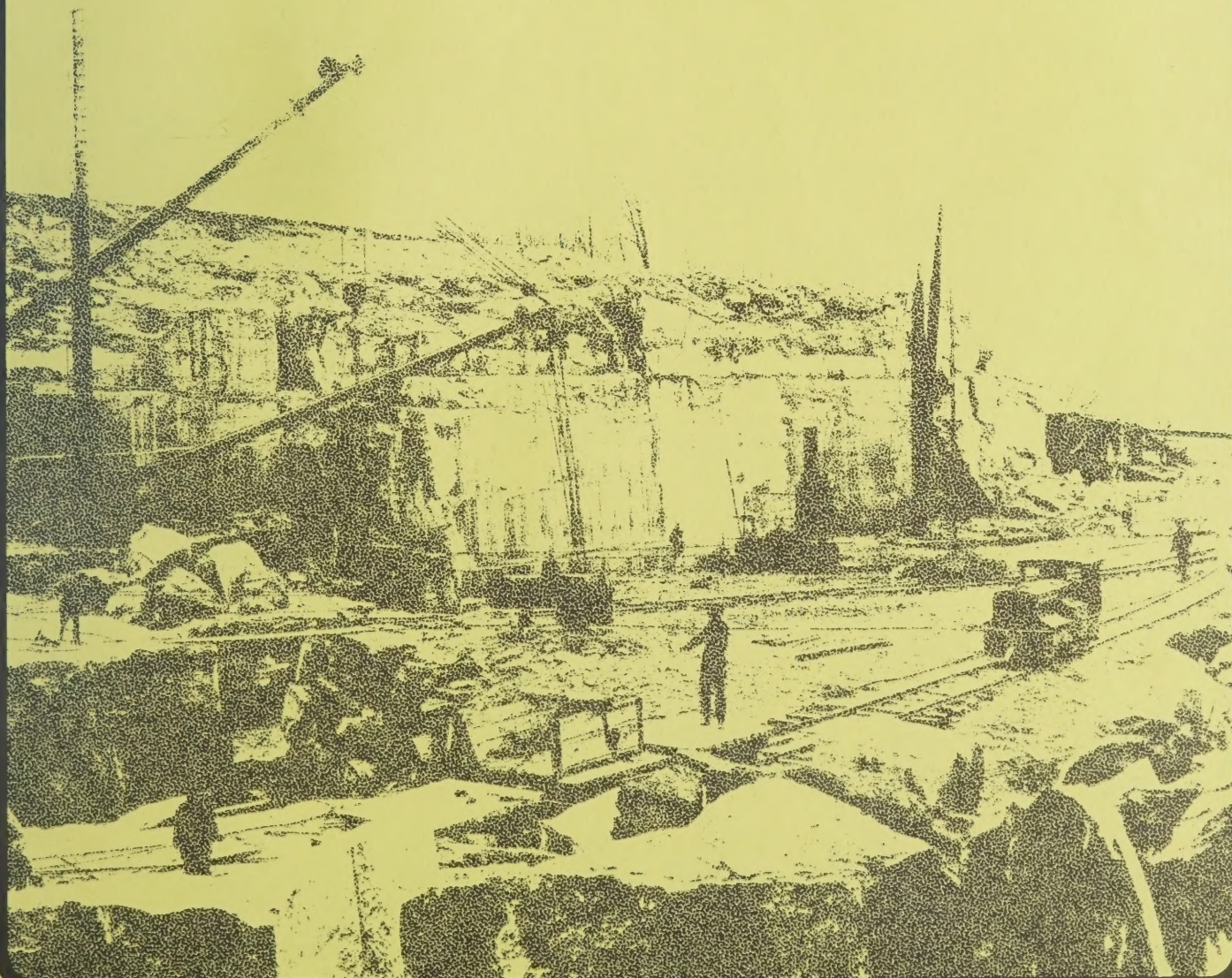
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DEPARTMENT OF NATURAL RESOURCES
Frances S. Buchholzer, Director
DIVISION OF GEOLOGICAL SURVEY
Thomas M. Berg, Chief

1990 REPORT ON OHIO MINERAL INDUSTRIES

WITH
DIRECTORIES OF REPORTING
COAL AND INDUSTRIAL MINERAL OPERATORS





DIVISION OF GEOLOGICAL SURVEY
4383 FOUNTAIN SQUARE DRIVE
COLUMBUS, OHIO 43224-1362
(614) 265-6588 (Voice)
(614) 265-6994 (TDD)
(614) 447-1918 (FAX)

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1990 REPORT ON OHIO MINERAL INDUSTRIES

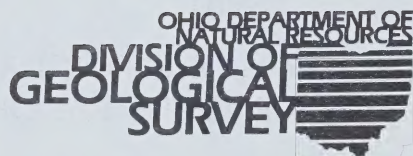
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DIRECTORIES OF REPORTING
COAL AND INDUSTRIAL MINERAL OPERATORS

compiled by

Sherry L. Weisgarber

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Cover photo: Briar Hill Stone Co. quarry, Glenmont, Ohio,
circa 1926. See article on stone cutting beginning on p. 1.

PREFACE

The Ohio Department of Natural Resources, Division of Geological Survey recognizes the importance of the annual *Report on Ohio mineral industries*. We understand that this publication is widely used by mineral resource producers as a tool for planning future exploration, development, and marketing. The Geological Survey has made a number of changes in the way that this publication is produced, including increased use of computers. Our goal is to have this report in the hands of Ohio's mineral producers and others who need this information early in the fourth quarter of the year. In these times of shrinking budgets and staff reductions, meeting such goals becomes more and more difficult. But because this particular publication is so important to Ohio's economy, it will continue to have the highest priority.

The health of Ohio's mineral industries depends on a broad spectrum of technological, economical, political, environmental, and societal factors. An important factor is the public image of the extractive industries. Many of our citizens feel that mining is an inherently damaging activity and should be minimized or eliminated. Too few citizens really understand how much our society and our quality of life depend on mining. Too few citizens understand that most of the materials we use every day are extracted from the earth. Too few citizens understand how much effort is put into reclaiming the land after mining. The Ohio Geological Survey is one of the most proactive state agencies working to educate our citizens about the importance of our mineral industries. Our annual Mineral Industries Teachers Workshop serves to educate thousands of students about the importance of the mineral industries. Articles in our quarterly publication, *Ohio Geology*, frequently focus on mineral production and its importance. The Ohio Department of Natural Resources is committed to natural resource and environmental education. The Division of Geological Survey will participate in the Department's educational efforts and will work hard to assure broad understanding of the value of our mineral producers.

Thomas M. Berg
State Geologist & Chief



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FOREWORD

The *1990 Report on Ohio mineral industries* begins with two articles relating to the mineral industries of Ohio. "The Art of the Briar Hill stonecutter—it's impact on Ohio architecture" was contributed by the Staff of the Briar Hill Stone Company, in Glenmont, Ohio. "Drilling for mine subsidence mitigation" was authored by Douglas L. Crowell, Survey Geologist and Core-Drilling Supervisor. Both of these articles are educational and interesting.

There are only a few changes and additions to the report this year. Most obvious may be that Sherry W. Lopez has changed her name to her maiden name of Sherry L. Weisgarber.

Changes to the tables include changing Table 10, *Ohio coal-mine employment, by occupational group and month*, to encompass all underground production workers under one category of "underground mining employees" and all surface production workers under one category of "surface mining employees." A category of "other" has been added and includes all employees who do not belong in any other employment category, such as mobile equipment operators, mechanics, or general outside workers. The addition of the "other" employment category has generated a new table, Table 15, *Ohio coal-mine employment in other positions, by county and month*.

The 1990 *Mineral industries map of Ohio* has been generated on the Survey's Intergraph computer-aided drafting (CAD) system and is on a new base. The new base should improve the clarity of the symbols and numbers on the map by decreasing the amount of background information.

Another change for 1990 is the use of the Ohio Department of Natural Resources, Division of Reclamation's permits to obtain production information for companies where specific information is lacking in the Division of Geological Survey's records. As usual, all of the changes and additions have been made to increase the clarity and usefulness of the report to the public. Any comments on how this report can better serve those interested in mineral resources in Ohio are always welcome.

Sherry L. Weisgarber
Geologist and
Mineral Statistician

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Errata for
1989 report
now available
upon request

1989-1990
1990-1991
1991-1992

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MAP

1990 Mineral industries map of Ohio

accompanying report

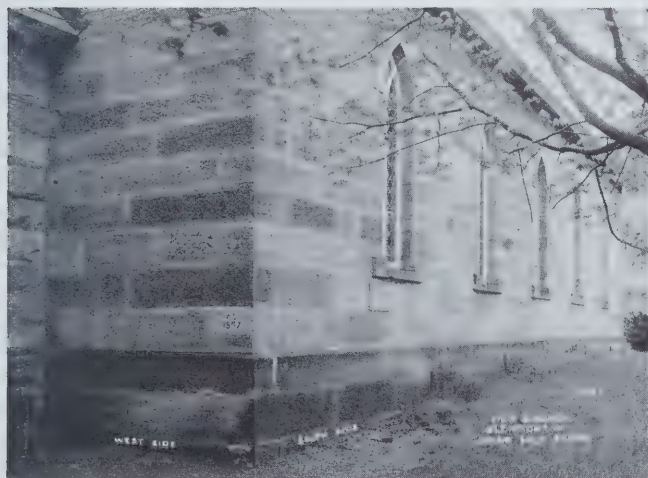
THE ART OF THE BRIAR HILL STONECUTTER—IT'S IMPACT ON OHIO ARCHITECTURE

by the Staff of the Briar Hill Stone Co., Glenmont, Ohio

There are some people in the construction industry that say that stonecutting is rapidly becoming a lost art form. They say that there aren't many stonecutters around anymore, and few that can do the intricately detailed handcarving that is required in the fabrication of decorative reliefs and gothic arches. We are happy to report that these rumors are not true. In fact, the demand for this unique craft is increasing and is an important part of the history and tradition of quality cutstone products produced by the Briar Hill Stone Co.

HISTORY OF THE COMPANY

Briar Hill Stone Co. is located in southwestern Holmes County and quarries sandstone from a Pennsylvanian-age geologic unit known as the Massillon Sandstone. The firm was founded in 1917 by Robert Blum, a stonecutter from Amherst, Ohio, who came to the area in search of a particular stone for a residence construction. The quarry was not new, as stone had been taken from it as early as 1857 to construct the Glenmont St. Peter's and St. Paul's Church. At the time Blum saw the quarry, it was being operated by the Purdy Brothers, who specialized in stone blocks for bridge culverts. He went back to his partner in Blum & Delbirdge and made arrangements to buy the quarry. The new stone company got its name from a New York sales agent who suggested the name while tramping through the briars around the quarry.



St. Peter's and St. Paul's Church, Glenmont.

It was during the 1920's that the company enjoyed its initial growth and became a major cutting plant in the sandstone building industry. There were 70 cutters on staff at that time, plus 12 carvers who specialized in sculpting statues. It was during these boom years that some of the

company's finest work was done. Jim Kline, a retired stonecutter with 45 years experience, recalls the stonecutting process: "The architect would draw up the plans, what he wanted, and turn the plans over to the draftsmen, who made patterns. We would work off of these patterns" (Holmes County Farmer-Hub, 1967).

From there the stone was carefully packed and shipped via railroad to its final destination. The list of jobs is impressive: circular steps to the Hilton Hotel in Washington, D.C.; special arches for the Edsel Ford residence in Detroit; and exquisite gothic-style carvings for Yale University, which kept the stonecutters busy for several years.

During the depression of 1929, the company struggled owing to a decline in building activity. Money was tight and building costs could be cut by eliminating the ornamental work supplied by the firm. Briar Hill's pre-depression staff of 70 stonecutters diminished rapidly, and by the late 1930's, only six were employed fulltime.

During World War II the plant was converted to support the war effort. The machinery was modified to make tank parts and the men dedicated themselves to working as steelworkers. The plant was awarded the Army-Navy "E" for excellence in production.

The company has grown from the one quarry to 10 quarries and from a small initial operation of 20 men to 80 men today. It has three crews who work the quarries located in Holmes, Knox, and Coshocton Counties, depending upon the color of stone required. The late Harold Blum, trained in stonecutting by his father, developed the machine process by which sandstone could be split into unit heights. Although the idea itself was not new, it was the first machine to make stone-setting easier, and Briar Hill takes credit for developing practical methods to make processing economical during the depression years. Production of ashlar stone is now a major product line. Briar Hill has worked continually to make stone-setting easier and more economical, to make the use of stone within the reach of everyone, not just a select few.

BRIAR HILL SANDSTONE IN OHIO ARCHITECTURE

For those who wish to discover the art of the stonecutter, a trip to Mount Vernon may be just the ticket. St. Paul's Episcopal Church is a good example of the work produced at Briar Hill. A large, hand-cut cross is perched high above the front door. After eyeing the cross, your attention will be drawn to a lavish rose-cut window in the immediate background. From there, keep looking up, past the beautifully arched windows to the four small crosses that crown each tower. Two of these crosses were replaced in the 1950's when lightning struck the church.

Briar Hill stonecutters are responsible for the American eagle which adorns the front of the Danville Commercial and Savings Bank. Their handiwork can readily be seen at the Millersburg Post Office, the vestibule at the



Views (circa 1926) of quarry (upper photo) and interior of cut stone mill (lower photo) of Briar Hill Stone Co., Glenmont.



St. Peter's Church, Loudonville (Ashland County) (upper photo), and Dayton Art Institute, Dayton (Montgomery County) (lower photo).



Leonard Hall on the Kenyon College campus,
Gambier (Knox County).



Building of former Standard Building & Loan Company
on Montgomery Rd. in Cincinnati (Hamilton County).

Sugarcreek Bank, St. Peters Church in Loudonville, and at a host of other area churches. The Dayton Art Institute, Leonard Hall at Kenyon College, and the Standard Building & Loan Company building in Cincinnati are further testaments to Briar Hill craftsmanship. Work currently in progress includes renovations to both the Michigan and Ohio State Capitol buildings and ornamental pieces supplied to the Cincinnati Historical Society Museum at Cincinnati Union Terminal.

SUMMARY

From this short discussion it is obvious that it is with pride that we can look back to a long history of service to the building industry. We believe that the dedicated employees of Briar Hill are our most valuable natural resource. They are making an enduring contribution to the art and architecture of Ohio—a contribution etched in stone.

REFERENCE CITED

The Holmes County Farmer-Hub: Millersburg, Ohio, April 13, 1967.

DRILLING FOR MINE SUBSIDENCE MITIGATION

by Douglas L. Crowell, Geologist and Core-Drilling Supervisor
Division of Geological Survey, Ohio Department of Natural Resources

A new chapter in the drilling program of the Ohio Department of Natural Resources (ODNR), Division of Geological Survey was written recently when the Survey's drill crews completed a 39-hole drilling project in Wellston, Ohio. The drilling was conducted in cooperation with the ODNR, Division of Reclamation and CTL Engineering, Inc., as part of a mine-subsidence mitigation investigation.

Wellston is in Milton Township, in northern Jackson County, approximately 9 miles northeast of Jackson, the county seat. The city of Wellston was founded in November 1873 and is named in honor of its founder, Harvey Wells. Wellston owes its existence and growth to the Quakertown (No. 2) coal, a once-plentiful and much-sought-after resource underlying the city. It is ironic that mining of this valued resource has left Wellston plagued, since at least 1923, with numerous mine-subsidence problems.

The 1977 federal Surface Mining Control and Reclamation Act established a federal severance tax on coal to provide funds for investigation of subsidence complaints and immediate correction of mining-related subsidence that threatens life or property. This program is administered by the federal Office of Surface Mining Reclamation and Enforcement, known as OSM. Because of the long history of subsidence problems and the numerous incidents of subsidence documented since 1977 in Wellston, OSM awarded funding to the ODNR, Division of Reclamation, which subcontracted with CTL Engineering, Inc., to devise a plan for mine-subsidence mitigation in Wellston. Part of this plan required holes to be drilled into the mine complex at Wellston to determine the extent of mining activity and the progress of subsidence under that portion of the city with the greatest number of subsidence complaints. At the request of the Division of Reclamation, the Division of Geological Survey drilled the holes under the direction of CTL Engineering, Inc.

MINING HISTORY

Coal was first reported in Jackson County in 1799 when salt wells were sunk into the conglomerate underlying the valley of Salt Creek (Morrow, 1956, p. 76-77). As early as 1820, coal was produced from mines along Buffalo Skull Road and the valley of Horse Creek, approximately 4 to 6 miles southwest of Wellston, and hauled to the blacksmiths of Ross County (Morrow, 1956, p. 77). "By the time Ohio's first Geological Survey was organized in 1837 there were a score or more benches and small openings in the county, the majority of which were in the Jackson Hill seam" (Morrow, 1956, p. 77). The Jackson Hill coal, also known locally as the Wellston, Coalton, or Elk Fork coal, is more commonly known as the Quakertown (No. 2).

Credit for discovery of the Quakertown coal in the vicinity of Wellston is generally given to H. S. Bundy, who encountered a seam of coal at a depth of approximately 70 feet while drilling for coal in 1872. Bundy believed this seam

to be the Jackson Shaft or Sharon (No. 1) coal, which was mined in the vicinity of Jackson and was a valued fuel for the smelting of iron (Morrow, 1956, p. 80). However, E. B. Andrews (1871, p. 132-133), in the Report of Progress in 1870 by the Geological Survey of Ohio, notes that a 38-inch-thick coal was described from a shaft which was sunk to a depth of 63 feet on the land of H. F. Austin in sec. 7, Milton Township, Jackson County. The depth of this coal makes it correlative to the Quakertown coal. This shaft was abandoned, apparently with little or no coal production, because it filled with water.

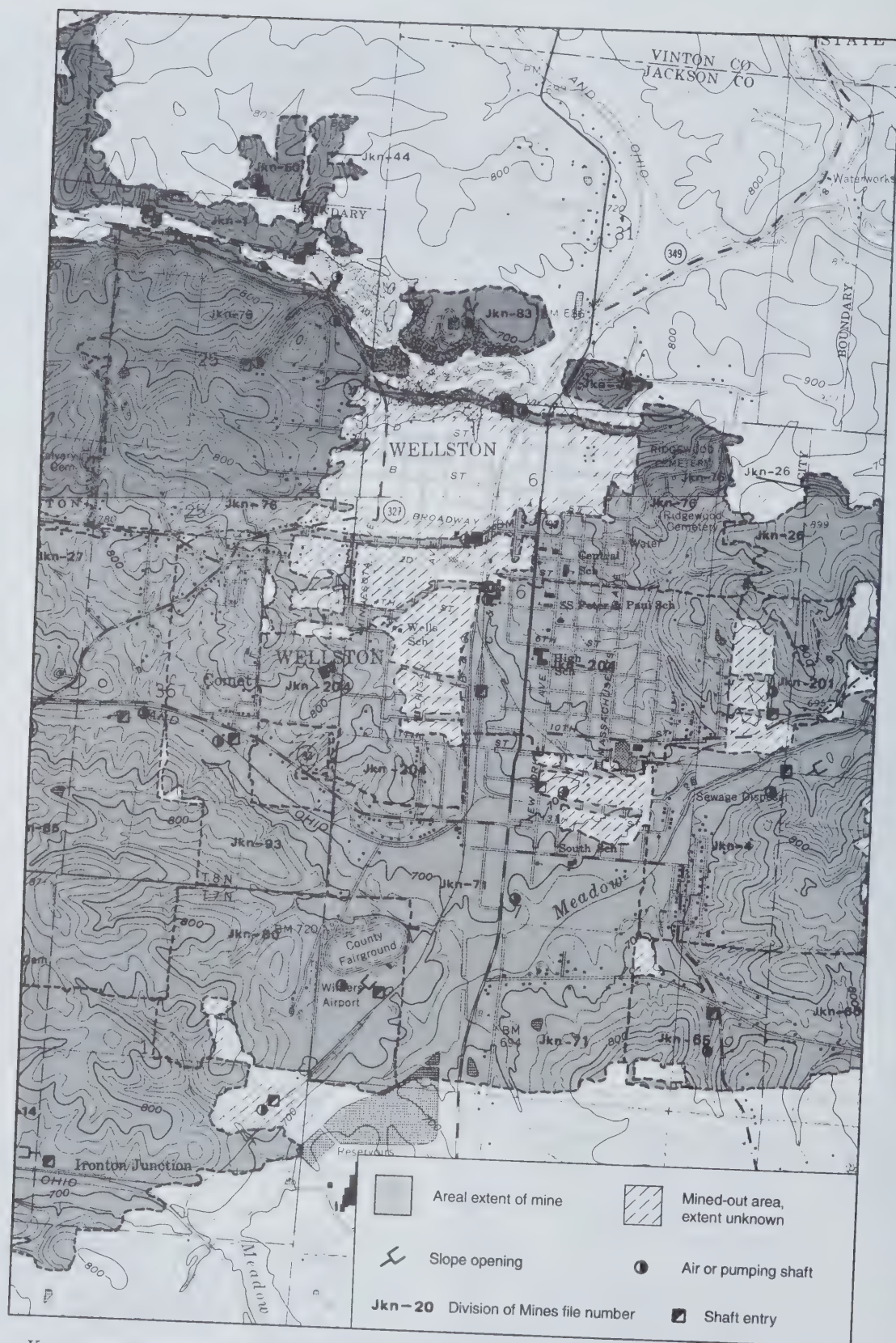
Abandoned underground mines located within the incorporated limits of Wellston, Ohio¹

Division of Mines file no.	Mine name	Year opened	Year abandoned	Depth of shaft (ft)
	Allburn Slope	1911	?	?
	Brown	?	?	?
Jkn-44	Bundy Run	1917	1923	?
Jkn-93	Comet	1881	1908	68
Jkn-80	D.C. & I. No. 1	1901	1908	89
Jkn-83	D.C. & I. No. 2	1906	1910	60
Jkn-201	Eliza	1876	1900	75
Jkn-60	Enterprise	1899	1904	56
Jkn-71	Fluhart No. 1	1881	1907	80
Jkn-65	Fluhart No. 2	1887	1907	167
Jkn-204	Milton No. 1	1873	1901	76
Jkn-204	Milton No. 2	1892	1905	80
Jkn-4	Milton No. 3	1899	1908	83
Jkn-85	Superior No. 1	1882	1912	100
Jkn-85	Superior No. 2	1883	1908	85
Jkn-27	Superior No. 3	1892	1915	47
Jkn-14	Superior No. 4	1892	1914	85
Jkn-1	Tom Corwin No. 2	1892	1904	35
Jkn-76	Wellston No. 1	1874	1899	65
Jkn-76	Wellston No. 2	1881	1899	78
Jkn-76	Wellston No. 3	1887	1911	87
Jkn-26	Wellston Colliery	1908	1917	89
Jkn-14	Willard	1883	1892	?

¹Information from Division of Mines file data, except Allburn Slope (Morrow, 1956) and Brown (Stout, 1916).

As a result of Bundy's discovery, the Milton Coal and Iron Company was formed in 1873 (Morrow, 1956, p. 80). During the same year this company sank a 71-foot-deep shaft and commenced mining, which marked the initial development of the Milton No. 1 mine, the first mine developed at Wellston (Morrow, 1956, p. 67). This mine provided fuel for the Milton Furnace, Wellston's first coal-fired blast furnace, which was built near the site of the Milton No. 1 shaft. Late

1990 OHIO MINERAL INDUSTRIES REPORT



Known extent of mines underlying the incorporated limits of Wellston. Reproduced from the Hamden and Wellston Abandoned-Underground-Mine Maps on open file at the Ohio Division of Geological Survey. Contour interval of the topographic base is 20 feet. See table on page 5 for names of mines and Division of Mines file numbers.

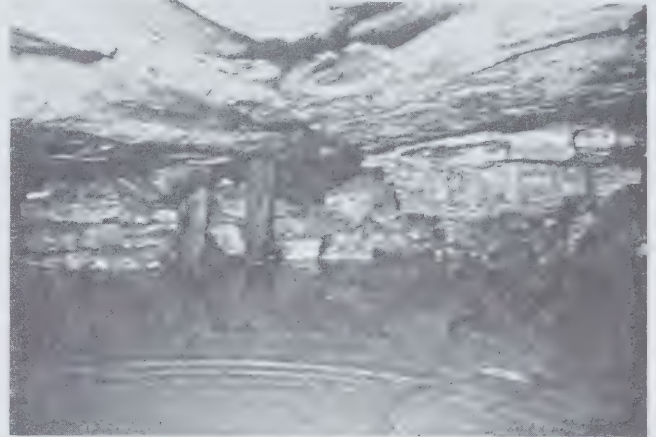
in 1873 the Wellston Coal and Iron Company was organized by Harvey Wells and sank a 65-foot-deep shaft near the residence of H. S. Bundy, who was Wells' father-in-law (Morrow, 1956, p. 53). This shaft became the main hoisting shaft for the Wellston No. 1 mine and supplied fuel to the Wellston Twin Furnaces, built at the site of the shaft.

Although the coal discovered by Bundy was not the Jackson Shaft or Sharon (No. 1) coal, it proved to be an acceptable fuel for the smelting of iron and was generally recognized as a superior fuel for domestic purposes and the generation of steam power. Because of the superior quality of the Quakertown coal, Wellston prospered in reputation and growth. According to Andrew Roy, Ohio's first State Inspector of Mines: "No mineral region in Ohio or in the United States can bear comparison with Wellston and its surroundings, whether we consider the extent and quality of the mineral treasures or the unparalleled development of the coal and iron industries. There are twelve shafts for mining coal in active operation within a radius of two miles of the town, besides four blast furnaces and one rolling or steel and nail mill. These industries give direct employment to 2,000 men. The capacity of the mines is equal to half a million tons annually, while the capacity of the blast furnace is fully 300,000 tons of pig iron" (*Wellston Argus*, April 30, 1887, in Howe, 1900, p. 958). Because of the success of the mines, Wellston's population grew rapidly. The first census of Wellston in 1875 listed the population as 650. Censuses in 1880, 1890, and 1900 show a growth in population to 952, 4,377, and 8,045, respectively. It is interesting to note that the peak employment of the mines located within the present-day incorporated limits of Wellston was reached in 1895 at 1,397 miners, approximately one-quarter of Wellston's population at the time. In 1897, electric cutting machines and haulage equipment were introduced into the mines at Wellston, and coal employment steadily declined thereafter.

The original plot of the town contained 271 acres divided into 784 lots. Present-day Wellston occupies an area of 4,427 acres (6.9 square miles). Within the present-day incorporated limits of Wellston are at least 23 abandoned underground coal mines (see table), which include 17 main or hoisting shafts, 18 air shafts, and 4 slope openings (see map on p. 6). These mines were in operation during a 50-year period from 1873 to 1923. The known extent of these mine workings occupies an area of about 3,005 acres, or approximately 70 percent of the incorporated area of Wellston.

The layout of Wellston was well-planned, and the plan followed by the operators of the Wellston coal mines was generally well-conceived. The streets of Wellston were laid out in a rectangular grid pattern with streets 70 to 100 feet wide and intersections 300 feet apart. The main haulage-ways of the mines underlying Wellston were generally driven directly underneath the city streets. Some small portions of the mines were left unmined to offer protection from subsidence to surface dwellings, such as the residence of Theodore Fluhart and the T. J. Morgan mansion, which is presently the Wellston City Building. Theodore Fluhart was the mine superintendent for the Fluhart No. 1 and No. 2 mines. T. J. Morgan was part owner of the Wellston Coal Company, which purchased the coal holdings of the Wellston Coal and Iron Company, and superintendent for the Wellston No. 1, No. 2, and No. 3 mines. It is easy to speculate that these gentlemen knew the potential risk of building over a coal mine, as their homes were located over unmined areas. Morrow (1956, p. 90) states that "The coal under nine blocks of property in the business district of Wellston was undisturbed by the early operators to avoid the danger of subsidence in later years." It is not known which nine blocks

were left unmined, as mine maps of this area are incomplete. However, Morrow states further (p. 90) that "Mining under the main streets and under the balance of the city was conducted in a conventional manner by the several companies that operated within the city limits. Considerable damage to property and streets, through subsidence, has occurred from time to time . . ."



A typical scene in an abandoned underground coal mine. On the right is a pillar of coal, in the center are roof-support timbers, and in the lower foreground is the flooded mine floor. Note the sag of the roof rock in the upper foreground and the fallen-in roof rock in the background. Photo courtesy of ODNR, Division of Reclamation.

SUBSIDENCE

Subsidence, which, in terms of mining, is the gradual lowering of the earth's surface due to underground mining, can be very costly in terms of property damage. Since 1923, numerous incidents of subsidence with displacement up to 4 feet have occurred in Wellston and have been well-documented by local newspapers and ODNR personnel. These accounts describe structural damage in Wellston to several private residences and public buildings, curbing, sidewalks, and highways, and disruption of gas, water, and



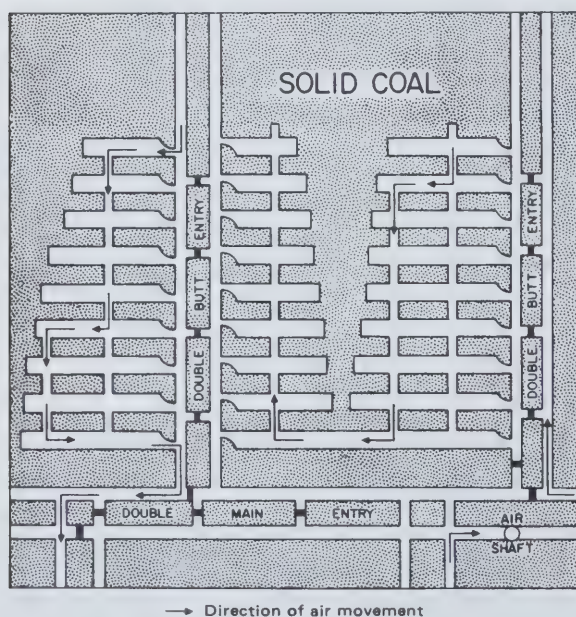
Structural damage to a garage in Wellston caused by subsidence of an abandoned underground coal mine. Photo courtesy of ODNR, Division of Reclamation.

sewer lines. In a few instances, buildings were razed because of subsidence damage.

The following discussion on the factors controlling mine subsidence is taken from an article by Richard M. DeLong which appeared in the fall 1988 issue of *Ohio Geology* and has been modified to fit the situation at Wellston. Modifications in directly quoted material are italicized.

The susceptibility to subsidence of an area that overlies old workings is difficult to forecast, but consideration of some of the mining practices and the variable geologic factors gives some understanding of the complexity of prediction. The mining process begins by driving a main entry, which *in the mines at Wellston is generally two parallel tunnels*, into the coal (see diagram). From the main entry, side entries are driven; from the side entries, areas called rooms are mined, with unmined coal in columns called pillars left between the rooms and *entryways* to support the roof of the mine. In addition to the pillars of coal, many mines used timbers to help support entries and passageways. It is from the rooms that the main coal production comes. This system of mining, aptly called "room and pillar," was universally practiced in the mines of the Wellston area.

The first step in mining is gaining access to the coal. If the coal crops out on the hillside above drainage, it requires only a horizontal, or drift, entry into the seam. However, if the coal lies below stream level, as the *Quakertown coal does in Wellston*, it must be reached by a *main or hoisting shaft*, a vertical opening, or by a slope entry, an opening which angles downward 25° to 30° from the horizontal. Air shafts to provide ventilation and emergency escapeways were commonly sunk Both air shafts and main or hoisting shafts in the Wellston mines are of considerable dimension, on the order of 8 feet by 16 to 20 feet in horizontal section and with depths ranging from 35 (northwest end of Wellston) to 167 feet (southeast end of Wellston).



Idealized double-entry room-and-pillar mine layout.

Double entries in the Wellston mines generally were cut 8 to 10 feet wide and had a pillar 9 to 12 feet wide left between them. The pillar was cut through at least every 120 feet for ventilation. Double entries generally were used in the Wellston mines in which the Quakertown coal reached a height of 3½ to 4 feet. Single entries were driven in mines where the Quakertown coal was less than 3½ feet thick. Rooms worked off the entries generally were 24 feet wide and 210 to 240 feet long, and pillars left between rooms

ranged up to 12 feet wide. Breakthroughs were made between rooms at intervals of 75 to 90 feet. Breakthroughs between adjacent mines were common. In most of the Wellston mines enough bottom clay or shale was removed to give a working height of 4½ feet in the rooms. However, enough bottom material and roof shale were removed along the entryways to provide a level mine floor and a traveling height of approximately 6 feet to accommodate the use of large mine cars and small mules to haul the coal. Commonly the pillars in the Wellston mines were later mined ("robbed" or "drawn") in retreat mining, leaving as little pillar as deemed necessary for safety. The philosophy behind this kind of mining is best expressed in an account of the Fluhart No. 1 mine from the Annual Report for 1887 of the State Inspector of Mines (1888, p. 119): "It [the mine] is being gutted out in grand style, by taking out the pillars and all and letting it fall in. I believe the first fall that has occurred in the district from taking out room pillars took place here recently. That is the right way to mine coal. Take it all out. It was put under the ground for that purpose, and it ought to be taken out." However, pillar work was considered the most dangerous part of mining and many miners were injured or killed while mining pillars.

A major factor in subsidence is the amount of coal that has been mined. The U.S. Geological Survey considers 50 percent as the overall average amount of coal recoverable in room-and-pillar mining. However, in that part of a mine where pillars have been attacked or removed, the amount of coal recovered may increase to as much as 80 percent. Obviously, as the size of a pillar decreases and the area of unsupported mine roof increases, then the likelihood of subsidence increases.

Whether or not mine subsidence occurs depends also on the character and thickness of the overburden. The total thickness, the strength of the overlying beds, and the occurrence of joint and fault planes are all factors determining if collapse will reach the surface. Coals in Ohio are generally overlain by shale, clay, sandstone, or limestone. Thick, competent (strong) beds such as massive sandstone or limestone may be able to bridge the gap of a mined-out void, whereas soft, jointed beds such as shale or clay tend to collapse. Bridging of the void may be partial or complete, as the shattering and breaking of the overburden increases the volume of the rock. However, the increase in volume of material is reduced by compaction as the overlying beds collapse or sag owing to increased pressure, which, if sufficient, causes *incompetent (weak) beds such as clay and shale* to deform and flow. Generally, the thicker the overburden the less likely the collapse will be reflected at the surface.

There is apparently no time limit for subsidence, nor "safe depth" for potential subsidence. Ironically, the areal extent of subsidence on the surface may be greater than the areal extent of the mined-out area, because as the collapse propagates upward it is inclined from the vertical plane by about 25° to 30°. The inclination of rupture, termed "angle of draw," varies with the thickness and character of the overburden.

Another suspected factor in subsidence is the eventual failure of timbers used for mine support. The time required for these failures probably varies from mine to mine, and there are no guidelines for prediction. The role of water in a flooded mine is uncertain. Apparently the presence of water is not in itself supportive, yet in some cases subsidence follows dewatering of a mine. *Several incidents of subsidence were recorded in Wellston in 1981 when the area was experiencing a drought.*

Because of the complexity of the variables which contribute to mine-related subsidence, no acceptable system exists which is capable of accurately predicting the time or amount of subsidence in a variety of geologic settings. However, subsidence generally does not exceed the height of the mine void.

ABANDONED-UNDERGROUND-MINE MAPS

Ohio's first legislation regulating underground mining activities was passed in 1874. This legislation created the Office of State Inspector of Mines and was the first legislation enacted in the nation to provide health and safety protection to the coal miner. By 1880, Ohio's mine law was amended to require an accurate map be made of any underground excavation of not less than 15,000 cubic yards. This map was to be updated annually and filed with the Office of State Inspector of Mines, which was subsequently incorporated into the Ohio Department of Industrial Relations, Division of Mines. However, many mines in Ohio were incompletely mapped, and there are probably numerous other mines for which maps were never made or filed, or whose maps were lost or destroyed. Apparently one or a combination of these possibilities is true for Wellston, as numerous incidents or complaints of subsidence have been documented and no complete map of the detailed mine workings is available.

Without accurate mine maps or knowledge of the geology of the area, the task of devising an effective mine-subsidence mitigation plan becomes difficult. To assist the Division of Reclamation and CTL Engineering in the development of such a plan, the Survey drilled 39 holes and installed 27 observation wells into the Wellston mine complex.

METHODS AND RESULTS OF DRILLING

The Division of Geological Survey has had an active drilling program since 1971. The Survey has drilled 250

holes throughout Ohio, yielding approximately 95,000 feet of core. These cores have provided valuable geologic and mineral-resource information which is vital to meet future energy-, mineral-, and water-resource needs of the state. Although most holes are drilled to provide control points for bedrock or mineral-resource mapping by Survey geologists, the Survey has drilled some holes in support of special projects in cooperation with other governmental agencies at the federal, state, and local level. The drilling in Wellston for the Division of Reclamation was one such special project. The Wellston drilling, completed in January 1991, represents nothing less than a herculean effort by the Survey's drill crews, as nearly each of the holes was set up, drilled, grouted or PVC cased, road patched, and moved off in a single day's time.

Thirty-nine holes, 27 rotary and 12 core, were drilled into the mine complex underlying an approximately 24-square-block area in Wellston bounded by D street (north), 6th Street (south), Minnesota Avenue (west), and Michigan Avenue (east). This predominantly residential section of Wellston has experienced a large number of subsidence incidents or complaints over the years. Also, this area of Wellston lacks detailed maps of abandoned mine workings.

This drilling was conducted to determine (1) existence and condition of mine workings, (2) location and direction of the mine entryways, (3) depth to bedrock, (4) thickness and condition of the bedrock, (5) existence and thickness of pillars of coal, and (6) static water level of holes penetrating mine voids.

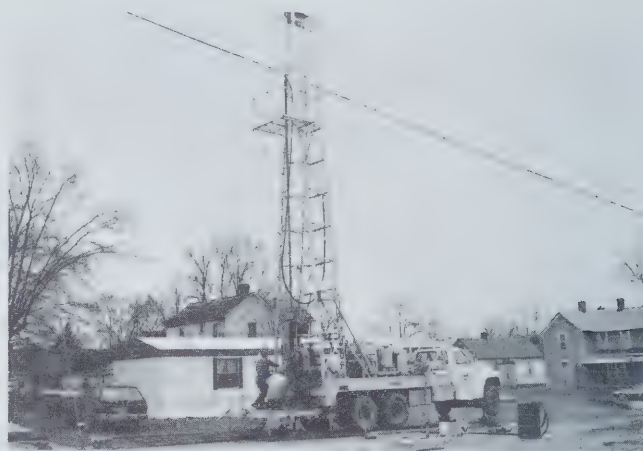
The holes were located at street and alley intersections and were offset from one another to maximize the chance



Map of the Milton Coal Co. No. 1, No. 2, and No. 3 mines on file at the Ohio Division of Mines (file no. Jkn-76). The map shows the rooms, pillars, entries, and hoisting and air shafts. Also shown are the streets in the central part of Wellston. This area has experienced numerous incidents of subsidence, and, although no mining is indicated on the map, drilling has verified that the area has been undermined.

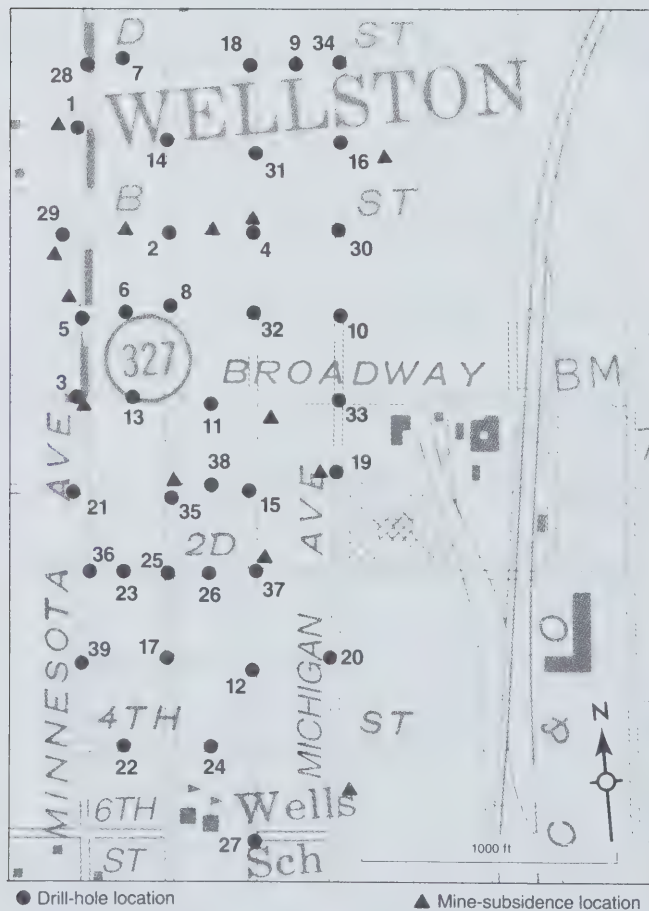
of drilling into the mine entries believed to lie beneath the city streets. Each of the core holes and observation wells generally was completed in one day to minimize the disruption of traffic flow. Drilling was coordinated with Wellston's City Service Director, Bill Coyle, and the Utility Protection Service to assure that none of the drill sites was located directly over any water, sewer, or gas lines or buried electric, phone, or cable TV cables. In addition, each site required adequate clearance from overhead electric or phone lines and tree branches.

The core holes were rotary drilled and cased to bedrock using 3½-inch O.D. steel surface casing, which sealed off any ground-water aquifers; the steel casing was removed upon completion of drilling. Each hole was continuously cored to approximately 10 to 20 feet below the mine complex using an NQ diamond-core bit (2⅝-inch hole diameter and 1⅞-inch core diameter). Upon completion of core drilling, a plug was seated into the bottom of the hole just above the top of the mine complex. The hole then was filled to the surface with portland cement. The rotary holes were drilled in two parts. The upper part of the hole was rotary drilled to bedrock using an 8¾-inch tri-cone button bit and cased using 4-inch I.D. schedule-40 PVC pipe, which was grouted in place using portland cement. The lower part of the hole was rotary drilled to a depth of about 10 feet below the mine complex using a 5¾-inch tri-cone button bit. Upon

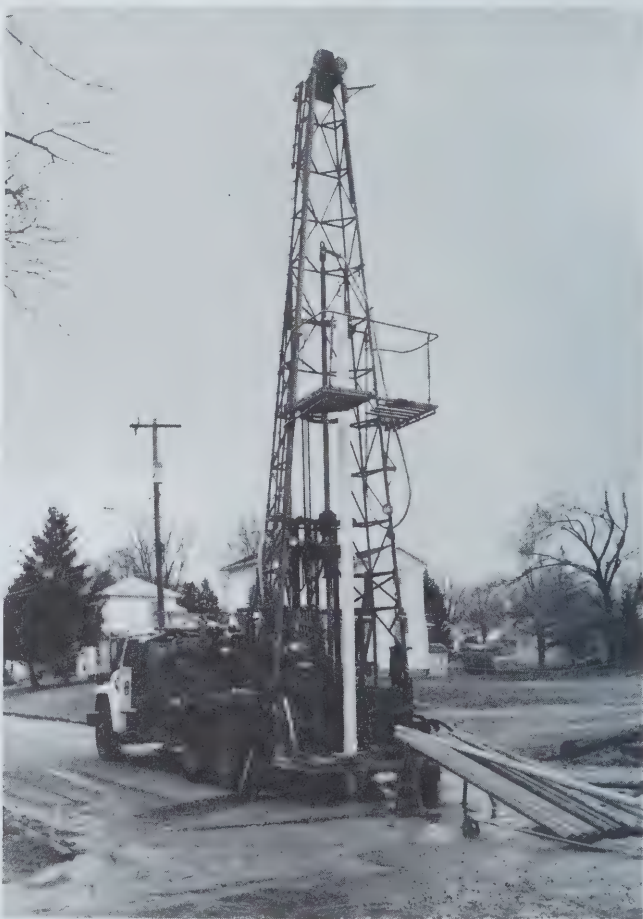


Division of Geological Survey drillers Roy Dawson (left) and Bill Dunfee (right) drilling into the mine complex underlying the streets of Wellston.

completion of drilling of the rotary holes, the PVC pipe was capped several inches below the surface of the road pavement and a temporary asphalt patch was emplaced above the casing to repair the road. The PVC-cased holes can be re-opened at a later date to monitor changes in the



Location of Ohio Division of Geological Survey drill holes and documented incidents of mine subsidence in a portion of Wellston. Base compiled from the Hamden and Wellston 7.5-minute topographic quadrangles, contour interval 20 feet.



Installation of 4-inch I.D. PVC pipe for an observation well into the mine complex underlying Wellston.

condition of bedrock, migration of mine-roof-collapse effects, and static water level. These observation wells can also be used as conduits for future emplacement of mine-stabilizing grout.

Drilling verified the existence of mine workings underlying that portion of Wellston where detailed maps are lacking. Thirty-three of the 39 holes penetrated mined-out voids. The total void space penetrated in these holes ranges from 20 inches (holes 7 and 19) to 8 feet 11 inches (hole 5) and averages 4 feet 10 inches. Although the holes were located with the intent of intersecting suspected entryways, the heights of the mined-out voids suggest that most holes penetrated mine rooms rather than entries. However, drill holes 1, 3, 5, 21, and 36 along Minnesota Avenue had void heights of 5 feet 8 inches or more and may have penetrated an entryway parallel to the street. Holes 2, 27, and 37 also may have penetrated entryways.

Drilling in Wellston revealed that an old river valley, now filled with unconsolidated material up to 56 feet thick (hole 25), underlies part of area. This buried valley trends northwest-southeast along a line between holes 21 and 20. On the north (hole 16) and south (hole 22) sides of the buried valley the thickness of unconsolidated material decreases to about 10 feet. Bedrock overlying the mined-out void ranges in thickness from 23 feet in the center of the buried valley (hole 25) up to 50 feet (hole 4) or greater north of the buried valley and 82 feet (hole 22) south of the buried

valley.

Six of the 39 holes drilled through a pillar of coal, which ranges in thickness from 3 to 4 feet. Three of the holes penetrating a pillar (holes 17, 25, and 26) are adjacent to one another, suggesting a single, large pillar may have been penetrated. Such a pillar may have been left as support to compensate for the thin bedrock roof underlying the buried valley and overlying the mine.

Each of the drill holes which penetrated a mined-out void shows that the mine complex is flooded. Static water level was measured in most of these holes and is quite variable, ranging in height from 1 foot (hole 34) to 34 feet (hole 13) above the top of the mine complex.

Core drilling shows that thick shales or sandy shales interbedded with thin sandstones overlie the Wellston mine complex. Some cores (holes 28, 29, 33, and 39) show that the mine roof is still intact. Over half of all the holes drilled into the mine complex show multiple void spaces in addition to the mined-out void. The presence of these multiple voids indicates that failure of the mine roof has occurred and that the collapse is in the process of migrating upward. When subsidence will affect the surface or the amount of subsidence which might occur cannot be predicted. However, it is expected that, after evaluation of the information obtained from the Survey drilling in Wellston, the Division of Reclamation and CTL Engineering will develop and implement a plan for mine-subsidence mitigation.

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1990 OHIO MINING ACTIVITIES IN BRIEF

Reports were filed in 1990 for 366 coal-mining operations, of which 217 reported coal production. Reports also were filed for 56 coal-washing plants and associated facilities. Of 602 industrial-mineral-mining operations known to be operating in 1990, 487 operations were active. There were 10 mines reporting production of coal and one or more industrial minerals and 27 mines reporting production of multiple industrial minerals (including those mines producing coal and industrial minerals). There were 1,143 new wells completed for oil and gas in 1990, of which 976 were productive and 167 were dry.

The total value¹ of coal was \$954,160,278 in 1990; the value of oil and gas was \$624,283,995; and the total value¹ of all nonfuel industrial minerals was \$433,643,025 in 1990.

¹Includes reported and estimated values. Some operations reporting sales did not report a value for those sales. A statewide average price per ton was calculated for each industrial mineral commodity based on sales for which the value was reported. A countywide average price per ton was calculated for coal based on sales for which the value was reported and method of production. These calculated averages were used to estimate the value of the sales for which the actual values were not reported.

TABLE 1.—1990 Mineral sales and production in Ohio

Commodity	Production ¹	Sales ²
Coal	33,127,567 tons	32,804,283 tons
Limestone and dolomite	55,001,240 tons	52,697,852 tons
Sand and gravel	46,641,588 tons	44,057,557 tons
Salt	4,374,985 tons	4,138,417 tons
Sandstone and conglomerate	1,979,604 tons	1,700,335 tons
Clay	1,580,163 tons	1,577,853 tons
Shale	1,372,909 tons	1,374,614 tons
Gypsum	204,539 tons	204,539 tons
Peat	38,690 tons	45,697 tons
Gas	154,618,630 MCF ³	⁴
Oil	10,008,263 barrels	⁴

¹The production figures for the industrial minerals are estimates. Many operators do not know actual production. Some operators report estimates, other operators do not report any production. For those operators who do not report production, production is assumed to equal sales.

²Includes material for captive use.

³Thousand cubic feet.

⁴Figure not available.

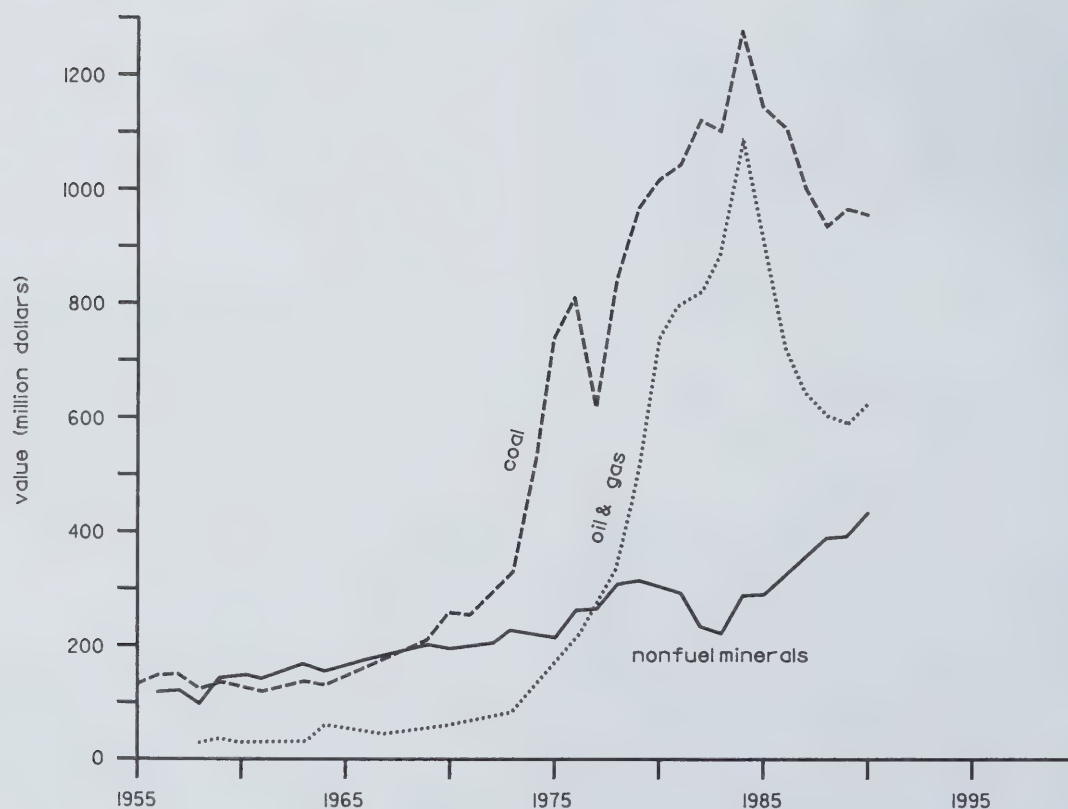


FIGURE 1.—Value of coal, nonfuel minerals, and oil and gas in Ohio.

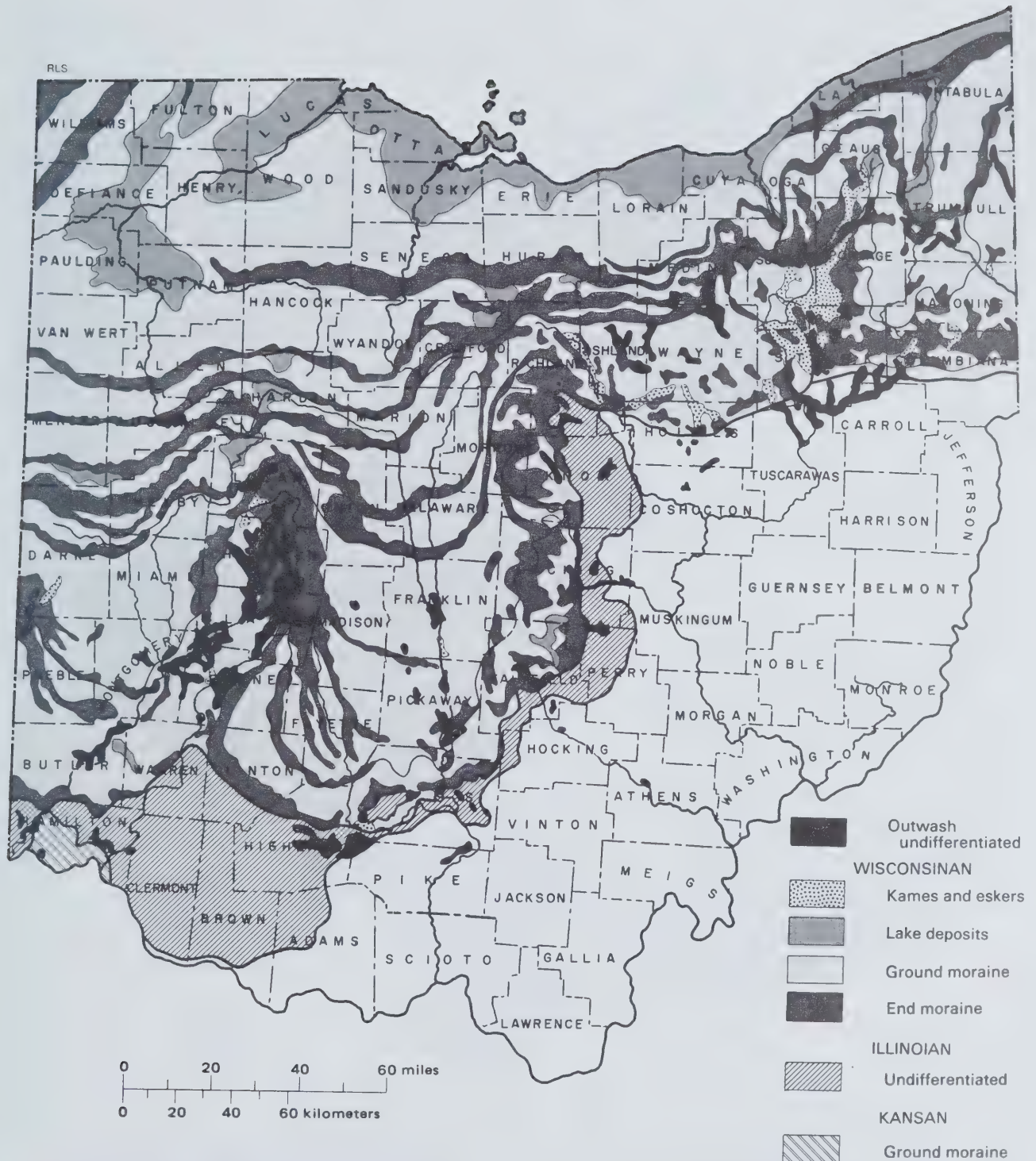


FIGURE 2.—Generalized map of the glacial deposits of Ohio. Continental glaciers advanced over the Ohio landscape several times during the Ice Age. These glaciers deposited unconsolidated materials on top of the bedrock over nearly two-thirds of the state. Most of Ohio's sand and gravel production comes from kames, eskers, and outwash, which were deposited by meltwater from the glaciers. Other glacially derived industrial minerals in Ohio include peat and clay.

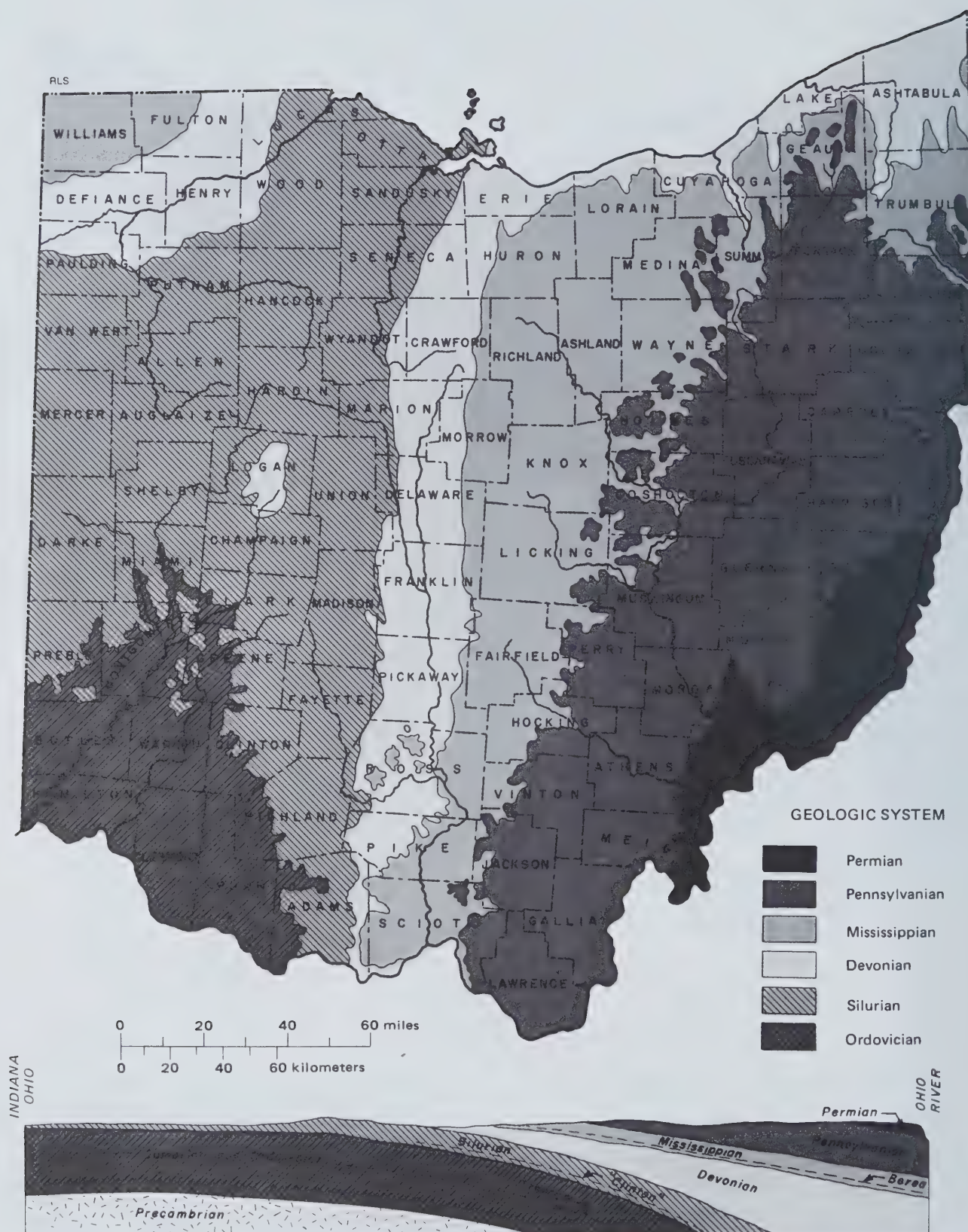


FIGURE 3.—Generalized geologic map and cross section of Ohio. Mineral production occurs throughout Ohio and from every geologic system from the Cambrian to the Permian. Coal, limestone and dolomite, sandstone and conglomerate, shale, clay, gypsum, salt, and oil and gas are produced from Ohio bedrock.

COAL

Coal was produced by 90 companies at 217 mines in 24 Ohio counties during 1990. Production increased 5.4 percent from 1989, totalling 33,127,567 tons in 1990, with 20,227,715 tons (61.1 percent of total production) produced at 207 surface mines, and 12,899,852 tons (38.9 percent of total production) produced at 12 underground mines (two mines produced both surface and underground tonnage). Ohio is the ninth-largest coal-producing state in the nation and ranks second nationally in coal consumption.² In comparison to 1989, there were 31 fewer mines reporting production of 50,000 tons or less, 7 fewer mines producing between 50,000 and 500,000 tons, 1 less mine producing between 500,000 and 1,000,000 tons, and 1 more mine reporting production of 1,000,000 tons or greater; there was a net decrease of 38 mines in 1990.

The five leading counties for 1990 production were Belmont, Meigs, Noble, Monroe, and Vinton Counties; these counties produced 55.2 percent of the 1990 total production. A total of 32,804,283 tons of coal were sold in 1990; total value³ was \$954,160,278. The average price per ton of all coal sold was \$29.09; surface-mined coal averaged \$26.16 per ton and underground-mined coal averaged \$33.70.

In underground mining, 36.7 percent of the coal

was mined by continuous miner and 63.3 percent was produced by longwall mining; less than 1 percent was produced by conventional mining in Ohio in 1990. In surface operations, 5.2 percent of the coal produced was auger mined, and 94.8 percent was strip mined.

The Pittsburgh (No. 8) coal was the most heavily mined seam, followed by the Clarion (No. 4A), Meigs Creek (No. 9), Middle Kittanning (No. 6), and Lower Kittanning (No. 5) seams. Coal produced from these five seams made up 84.9 percent of the total 1990 production.

A total of 21,393,607 tons of washed coal were reported in 1990. Reports from 26 coal-washing plants indicate an average 32.0 percent loss in washing.

Trucking was the primary means of coal disposition, carrying 54.5 percent of the total sales. Conveyor belts carried 23.6 percent, water transport carried 16.1 percent, and rail transported 5.8 percent of the coal sold in 1990. A total of 2.0 percent of the coal produced was reported as stored.

The total average annual employment reported in 1990 was 6,161 employees, 3,685 of whom were production employees. The average annual wage earned by all production employees was \$38,018, based on those employees for whom wages were reported. The average annual wage for surface-mine production employees was \$34,637, and the average annual wage for underground-mine production employees was \$42,469. Wages earned by all employees totalled \$237,871,684 in 1990.

²Information from U.S. Department of Energy, Energy Information Administration.

³Includes reported and estimated values. See footnote 1, p. 12.



FIGURE 4.—Coal sales in Ohio in 1990, by county.

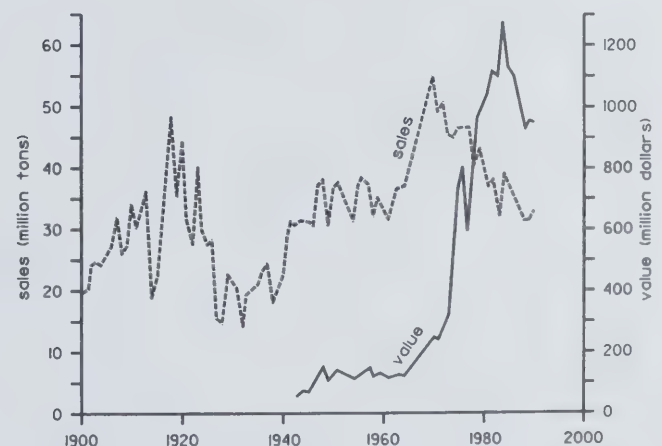


FIGURE 5.—Sales and value of coal in Ohio.

1990 OHIO MINERAL INDUSTRIES REPORT

TABLE 2.—1990 Ohio coal production by production-size group and change from 1989

Production-size group	1990		Change from 1989 (short tons)
	Number of mines reporting	Production (short tons)	
Under 25,000 tons	87	873,294	-282,770
25,000 to 49,999 tons	31	1,159,983	-499,051
50,000 to 99,999 tons	38	2,766,832	-277,732
100,000 to 249,999 tons	37	5,506,667	-727,335
250,000 to 499,999 tons	15	5,170,931	-433,793
500,000 to 999,999 tons	3	2,374,823	-277,336
1,000,000 tons and over	6	15,275,037	+4,194,007
TOTAL	217	33,127,567	+1,695,810

TABLE 3.—1990 Ohio coal production by county and mining method

County ¹	All methods (short tons)	Underground					Surface			
		Number of mines reporting	Production (short tons)				Number of mines reporting	Production (short tons)		
			Total	Longwall	Conventional	Continuous miner		Total	Strip	Auger
Athens	130,259						2	130,259	130,259	
Belmont	5,141,451	2	3,336,415	2,013,240		1,323,175	33	1,805,036	1,603,252	201,784
Carroll	1,015,557						16	1,015,557	929,422	86,135
Columbiana	1,053,887	4	573,004			573,004	14	480,883	447,517	33,366
Coshocton	2,117,347						13	2,117,347	1,925,032	192,315
Guernsey	156,140						2	156,140	143,630	12,510
Harrison	2,040,603	1	43,062			43,062	14	1,997,541	1,977,595	19,946
Hocking	96,736						6	96,736	96,736	
Holmes	459,129						6	459,129	459,129	
Jackson	1,200,883	1	200		200		7	1,200,683	1,200,683	
Jefferson	2,086,436						16 ²	2,086,436	2,018,968	67,468
Lawrence	316,025						2	316,025	316,025	
Mahoning	191,160						2	191,160	170,998	20,162
Meigs	4,335,439	2	4,335,439	3,339,902		995,537				
Monroe	2,540,848	1	2,540,848	2,106,387		434,461				
Morgan	43,243						1 ³	43,243	43,243	
Muskingum	349,773						2 ²	349,773	311,158	38,615
Noble	3,814,089						8	3,814,089	3,699,281	114,808
Perry	1,375,486	1	997,791			997,791	5	377,695	377,695	
Stark	170,635						9	170,635	163,223	7,412
Tuscarawas	1,949,601						38	1,949,601	1,695,975	253,626
Vinton	2,444,537	1 ⁴	1,073,093	700,984		372,109	12 ²	1,371,444	1,371,444	
Washington	64,281						1 ⁵	64,281	64,281	
Wayne	34,022						1 ⁶	34,022	34,022	
TOTAL	33,127,567	12 ⁷	12,899,852	8,160,513	200	4,739,139	207 ⁷	20,227,715	19,179,568	1,048,147

¹Production from mines operating in more than one county was evenly split between the counties involved unless a by-county breakdown was provided by the operator.²Does not include mines extending into this county from adjoining counties.³This mine extends into Morgan County from Noble County and is not included in the total number of mines.⁴This mine extends into Vinton County from Meigs County and is not included in the total number of mines.⁵This mine extends into Washington County from Noble County and is not included in the total number of mines.⁶This mine extends into Wayne County from Holmes County and is not included in the total number of mines.⁷Production was reported from a total of 217 mines; two mines in Columbiana County produced both surface and underground tonnage.

TABLE 4.—1990 Ohio coal production by county and month

County ¹	Production (short tons)												
	Total annual	January	February	March	April	May	June	July	August	September	October	November	December
Athens	130,259	23,554	14,191	14,173	6,809	5,274	8,668	10,829	10,873	9,951	6,514	9,672	9,751
Belmont	5,141,451	409,101	456,843	410,605	335,193	377,471	448,965	390,992	444,767	420,490	509,228	468,222	469,574
Carroll	1,015,557	95,289	87,974	88,180	87,224	76,530	80,054	83,214	87,139	79,488	88,375	79,433	82,657
Columbiana	1,053,887	116,569	85,513	87,449	102,900	75,677	70,351	78,302	90,264	64,200	100,083	95,972	86,607
Coshocton	2,117,347	179,217	173,704	196,794	181,695	193,957	182,665	173,762	177,128	171,613	166,077	173,258	147,477
Guernsey	156,140	11,221	8,454	7,816	9,999	10,294	19,432	16,383	12,981	17,478	17,484	14,952	9,646
Harrison	2,040,603	171,590	190,572	222,731	175,914	137,405	130,698	141,627	179,555	179,464	163,044	183,172	164,831
Hocking	96,736	10,321	9,177	6,939	11,412	8,428	7,035	7,686	6,756	5,554	6,560	9,697	7,171
Holmes	459,129	41,018	36,937	42,917	37,441	39,046	39,823	40,856	38,374	31,334	42,883	40,170	28,330
Jackson	1,200,883	114,278	109,200	106,483	100,792	91,804	88,884	104,256	94,000	110,687	115,694	103,178	61,627
Jefferson	2,086,436	188,242	141,364	170,249	173,033	173,029	188,508	168,760	186,003	178,755	192,916	162,371	163,206
Lawrence	316,025	6,113	4,473	1,644	1,382	1,382	1,382	53,860	71,636	47,899	58,825	56,438	10,991
Mahoning	191,160	22,561	21,323	19,836	16,505	14,678	16,467	13,183	13,289	10,526	12,318	16,435	14,039
Meigs	4,335,439	471,388	426,696	427,075	370,406	372,893	305,342	319,423	308,317	265,166	350,145	334,322	384,266
Monroe	2,540,848	229,249	221,841	243,574	176,290	231,829	232,607	149,028	212,050	207,063	227,043	183,924	226,350
Morgan	43,243	0	0	8,478	5,035	5,672	6,922	5,111	9,349	0	0	2,676	0
Muskingum	349,773	85,211	26,860	41,097	12,511	5,066	12,142	16,758	9,849	28,043	31,427	40,337	40,472
Noble	3,814,089	281,549	243,135	297,453	314,569	331,684	267,996	292,194	403,608	361,076	379,333	324,182	317,310
Perry	1,375,486	168,815	132,139	151,590	132,145	128,172	93,709	97,526	127,521	111,492	125,186	83,537	23,654
Stark	170,635	11,789	15,043	11,879	13,504	12,045	11,545	10,177	19,710	16,770	12,143	15,327	20,703
Tuscarawas	1,949,601	196,598	183,669	183,223	172,559	150,094	144,147	147,398	158,183	125,485	157,466	172,135	158,644
Vinton	2,444,537	218,980	208,568	247,991	195,121	168,616	154,124	178,017	209,045	192,620	238,467	239,774	193,214
Washington	64,281	5,679	7,674	6,940	7,589	6,070	8,853	1,430	1,241	1,444	6,129	6,802	4,430
Wayne	34,022	3,039	3,839	4,109	2,620	3,406	2,607	3,217	3,401	1,073	2,304	2,593	1,814
TOTAL	33,127,567	3,061,371	2,809,189	2,999,225	2,642,648	2,620,522	2,522,926	2,503,989	2,875,039	2,637,671	3,009,644	2,818,579	2,626,764

¹Production from mines operating in more than one county was evenly split between the counties involved unless a by-county breakdown was provided by the operator.



Loading coal at Waterloo Coal Co. strip mine, Jackson County. Photo taken during 1989 Ohio's Mineral Industries Teachers Workshop.

TABLE 5.—1990 Ohio coal production

County ¹	Production									
	Total	Sharon (No. 1)	Lower Mercer (No. 3)	Upper Mercer (No. 3A)	Brookville (No. 4)	Winters	Clarion (No. 4A)	Lower Kittanning (No. 5)	Strasburg (No. 5A)	Middle Kittanning (No. 6)
Athens	130,259									65,129
Belmont	5,141,451									
Carroll	1,015,557							299,615		451,486
Columbiana	1,053,887				49,348			31,059		21,503
Coshocton	2,117,347							623,105		1,494,242
Guernsey	156,140									
Harrison	2,040,603									
Hocking	96,736							13,033		54,571
Holmes	459,129				53,617			229,327		176,185
Jackson	1,200,883	68,044			50,676		471,021	574,400		31,204
Jefferson	2,086,436									
Lawrence	316,025						98,412	110,643		106,970
Mahoning	191,160				190,934					226
Meigs	4,335,439						4,335,439			
Monroe	2,540,848									
Morgan	43,243									
Muskingum	349,773							6,207		82,801
Noble	3,814,089									
Perry	1,375,486									1,201,211
Stark	170,635				95,177			43,309	5,868	26,281
Tuscarawas	1,949,601			182,129	101,797			487,980	16,235	623,748
Vinton	2,444,537		118,394		540,410	63,018	1,231,796	436,293		49,519
Washington	64,281									
Wayne	34,022				34,022					
TOTAL	33,127,567	68,044	118,394	182,129	1,115,981	63,018	6,136,668	2,854,971	22,103	4,385,076

¹Production from mines operating in more than one county was evenly split between the counties involved unless a by-county breakdown was provided



Shaft mine to the Middle Kittanning coal at Congo, Perry County, circa 1948.

by county and seam

(short tons)

Lower Freeport (No. 6A)	Upper Freeport (No. 7)	Mahoning (No. 7A)	Anderson	Harlem	Pittsburgh (No. 8)	Pomeroy- Redstone (No. 8A)	Meigs Creek (No. 9)	Waynesburg (No. 11)	Washington (No. 12)
65,130	7,267	58,048		205,253	3,793,953		773,661	479,320	87,250
536,149	1,155				4,620				
	411,208								
	156,140			127,738	1,505,577	132,926	231,300		
29,132	43,062								
	5,538				1,751,056	335,299	81		
					2,540,848				
		174,275	37,822		7,810		43,243		
							260,765		
							3,768,457		
88,029	449,683						64,281		
5,107									
723,547	1,248,328	58,048	37,822	332,991	9,603,864	468,225	5,141,788	479,320	87,250

by the operator.



Cattle grazing on reclaimed strip-mined land. Date and location unknown.

1990 OHIO MINERAL INDUSTRIES REPORT

TABLE 6.—1990 Disposition of Ohio coal, by county

County ¹	Number of mines	Disposition ¹ (short tons)						Stored
		Total ²	Rail	Water	Truck	Conveyor	Unspecified/ other	
Athens	2	130,259			130,259			
Belmont	35	5,080,847	1,752,493	1,907,701	1,420,653			141,307
Carroll	16	1,013,297			1,013,297			2,619
Columbiana	16	1,060,926			1,060,926			9,169
Coshocton	13	2,008,597		430,613	1,038,515	539,469		123,697
Guernsey	2	156,140			156,140			
Harrison	15	2,042,798	15,575	427,282	1,599,941			6,958
Hocking	6	96,850		37,717	59,133			
Holmes	6	459,129			459,129			
Jackson	8 ³	1,200,683		73,851	1,126,832			200
Jefferson	16	2,081,033		445,835	1,635,198			10,295
Lawrence	2	316,025			316,025			
Mahoning	2	190,622			190,622			5,115
Meigs	2	4,391,761			1,399,470	2,992,291		10,790
Monroe	1	2,325,659		1,754,880	570,779			215,189
Morgan	1 ⁴	43,243			26,107	17,136		
Muskingum	3 ⁵	367,030			106,265	260,765		
Noble	8	3,814,089			733,128	3,080,961		
Perry	6	1,394,668	94,241	5,018	1,074,655	220,754		76,497
Stark	9	170,635			170,635			
Tuscarawas	38	1,903,228	53,268	9,623	1,840,337			56,123
Vinton	12 ⁵	2,458,461		190,796	1,745,106	522,559		3,207
Washington	1 ⁶	64,281			64,281			
Wayne	1 ⁷	34,022			34,022			
TOTAL	217	32,804,283	1,915,577	5,283,316	17,971,455	7,633,935	0	661,166

¹Tonnage of coal shipped from mines operating in more than one county was evenly split between the counties involved and type(s) of disposition reported unless a by-county breakdown was provided by the operator.

²Does not reflect tonnage stored. Reflects tonnage sold and shipped from mine.

³One underground mine had tonnage stored, but no sales, and is not included in the total number of coal mines with sales.

⁴This mine extends into Morgan County from Noble County and is not included in the total number of mines.

⁵Does not include mines extending into this county from adjoining counties.

⁶This mine extends into Washington County from Noble County and is not included in the total number of mines.

⁷This mine extends into Wayne County from Holmes County and is not included in the total number of mines.

TABLE 7.—1990 Rail shipments of Ohio coal, by county of origin and carrier

County	Number of mines	Shipments (short tons)				
		Total	Conrail	Ohio Central	N & W	Wheeling & Lake Erie
Belmont	2	1,752,493	1,281,489	212,458	258,546	
Harrison	1	15,575	15,575			
Perry	1	94,241	94,241			
Tuscarawas	2	53,268				53,268
TOTAL	6	1,915,577	1,391,305	212,458	258,546	53,268

TABLE 8.—1990 Washed Ohio coal

		Raw coal (short tons)	Washed coal (short tons)	Loss in washing (short tons)	Loss in washing (percent)	Percent of all washed coals
By type of mining	From surface mines	10,377,702 ¹	8,706,892 ¹	1,670,810	16.1	40.7
	From underground mines	21,097,489	12,686,715 ¹	8,410,774	39.9	59.3
	TOTAL	31,475,191	21,393,607 ²	10,081,584	32.0	100.0
By seam	Lower Mercer (No. 3A)	102,461	92,213	10,248	10.0	0.4
	Brookville (No. 4)	157,328 ¹	141,606	15,722	10.0	0.7
	Winters	82,544	62,143	20,401	24.7	0.3
	Clarion (No. 4A)	10,950,979 ¹	5,832,053 ¹	5,118,926	46.7	27.2
	Lower Kittanning (No. 5)	1,331,598 ¹	1,083,335 ¹	248,263	18.6	5.1
	Middle Kittanning (No. 6)	2,973,056 ¹	2,293,891 ¹	679,165	22.8	10.7
	Lower Freeport (No. 6A)	6,873	5,104	1,769	25.7	<0.1
	Upper Freeport (No. 7)	650,234	528,354 ¹	121,880	18.7	2.5
	Pittsburgh (No. 8)	8,897,930 ¹	6,091,167 ¹	2,806,763	31.5	28.5
	Pomeroy-Redstone (No. 8A)	34,600	23,683	10,917	31.6	0.1
	Meigs Creek (No. 9)	3,981,245 ¹	3,388,032	593,213	14.9	15.8
	Waynesburg (No. 11)	565,925 ¹	384,983	180,942	32.0	1.8
	Washington (No. 12)	54,147 ¹	36,835	17,312	32.0	0.2
	Other ³	1,686,271	1,430,208	256,063	15.2	6.7
	TOTAL	31,475,191	21,393,607 ²	10,081,584	32.0	100.0

¹The raw tonnage (before washing) and/or the clean tonnage (after washing) of coal was estimated for those mines which failed to report this information. These estimates were calculated using a statewide-average loss-in-washing percentage based on raw/washed coal values for type of mining and for seam deemed to be reliable.

²These figures reflect total washed coal in 1990 and do not necessarily reflect only 1990 production. In 1990, 42.5% of the total production was reported as unwashed. Coal not designated as washed or unwashed was assumed to be unwashed.

³Unspecified tonnages of seams listed above.

TABLE 9.—1990 Dollar value of coal at mine by county and mining method

County ¹	Surface				Underground				Total			
	No. of mines	Tonnage sold (short tons)	Value at mine ² (dollars)	Per ton average (dollars)	No. of mines	Tonnage sold (short tons)	Value at mine ² (dollars)	Per ton average (dollars)	No. of mines	Tonnage sold (short tons)	Value at mine ² (dollars)	Per ton average (dollars)
Athens	2	130,259	\$3,407,575	\$26.16					2	130,259	\$3,407,575	\$26.16
Belmont	33	1,800,019	42,161,795	23.42	2	3,280,828	\$89,323,248	\$27.23	35	5,080,847	131,485,043	25.88
Carroll	16	1,013,297	23,517,363	23.21					16	1,013,297	23,517,363	23.21
Columbiana	14	487,922	11,659,638	23.90	4	573,004	8,227,554	14.36	16	1,060,926	19,887,192	18.75
Coshocton	13	2,008,597	59,145,712	29.45					13	2,008,597	59,145,712	29.45
Guernsey	2	156,140	4,084,622	26.16					2	156,140	4,084,622	26.16
Harrison	14	1,996,933	53,464,512	26.77	1	45,865	1,545,651	33.70	15	2,042,798	55,010,163	26.93
Hocking	6	96,850	1,622,073	16.75					6	96,850	1,622,073	16.75
Holmes	6	459,129	7,849,563	17.10					6	459,129	7,849,563	17.10
Jackson	7	1,200,683	26,033,411	21.68	1 ³				8 ³	1,200,683	26,033,411	21.68
Jefferson	16	2,081,033	54,025,469	25.96					16	2,081,033	54,025,469	25.96
Lawrence	2	316,025	6,922,965	21.91					2	316,025	6,922,965	21.91
Mahoning	2	190,622	5,705,656	29.93					2	190,622	5,705,656	29.93
Meigs					2	4,391,761	173,975,851	39.61	2	4,391,761	173,975,851	39.61
Monroe					1	2,325,659	79,242,473	34.07	1	2,325,659	79,242,473	34.07
Morgan	1 ⁴	43,243	1,710,356	39.55					1 ⁴	43,243	1,710,356	39.55
Muskingum	3 ⁵	367,030	13,296,930	36.23					3 ⁵	367,030	13,296,930	36.23
Noble	8	3,814,089	132,396,842	34.71					8	3,814,089	132,396,842	34.71
Perry	5	384,774	7,338,423	19.07	1	1,009,894	31,153,193	30.85	6	1,394,668	38,491,616	27.60
Stark	9	170,635	2,802,079	16.42					9	170,635	2,802,079	16.42
Tuscarawas	38	1,903,228	36,434,091	19.14					38	1,903,228	36,434,091	19.14
Vinton	12 ⁵	1,371,444	30,678,516	22.37	1 ⁶	1,087,017	45,038,546	41.43	12 ⁵	2,458,461	75,717,062	30.80
Washington	1 ⁷	64,281	1,055,966	16.43					1 ⁷	64,281	1,055,966	16.43
Wayne	1 ⁸	34,022	340,205	10.00					1 ⁸	34,022	340,205	10.00
TOTAL	208 ⁹	20,090,255	\$525,653,762	\$26.16	11 ⁹	12,714,028	\$428,506,516	\$33.70	217 ⁹	32,804,283	\$954,160,278	\$29.09

¹Sales reported from mines operating in more than one county were evenly split between the counties involved unless a by-county breakdown was provided by the operator.

²The FOB value of coal sold was estimated for those mines which failed to report this information. These estimates were calculated using a countywide-average price per ton by mining method based on reported FOB values deemed to be reliable.

³One underground mine in Jackson County had production, but no sales, and is not included in the total number of mines with sales of coal tonnage.

⁴This mine extends into Morgan County from Noble County and is not included in the total number of mines.

⁵Does not include mines extending into this county from adjoining counties.

⁶This mine extends into Vinton County from Meigs County and is not included in the total number of mines.

⁷This mine extends into Washington County from Noble County and is not included in the total number of mines.

⁸This mine extends into Wayne County from Holmes County and is not included in the total number of mines.

⁹Sales were reported from a total of 217 mines; two mines in Columbiana County sold both surface and underground tonnage.

TABLE 10.—1990 Ohio coal-mine employment¹, by occupational group and month

Occupational group	Number of employees												
	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
All production workers	3,685	3,879	3,815	3,828	3,735	3,730	3,677	3,613	3,642	3,602	3,639	3,636	3,425
Underground mines	1,557	1,588	1,578	1,586	1,576	1,575	1,583	1,531	1,534	1,553	1,572	1,578	1,428
Surface mines	2,128	2,291	2,237	2,242	2,159	2,155	2,094	2,082	2,108	2,049	2,067	2,058	1,997
Supervisory, technical, and clerical	1,176	1,198	1,203	1,204	1,184	1,184	1,190	1,180	1,180	1,166	1,140	1,148	1,130
Central preparation plant, central shop, etc.	833	828	813	809	850	840	828	821	829	839	875	868	791
Reclamation	149	108	117	131	173	179	160	168	175	164	170	131	114
Other ²	318	321	328	328	291	294	300	335	330	331	327	328	311
TOTAL	6,161	6,334	6,276	6,300	6,233	6,227	6,155	6,117	6,156	6,102	6,151	6,111	5,771

¹Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.²"Other" includes all employees who do not belong in any other employment category, such as mobile equipment operators, mechanics, or general outside workers.TABLE 11.—1990 Ohio coal-mine production employment¹, by county and month

County ²	Number of employees												
	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
Athens	23	29	30	30	30	30	30	17	18	15	16	16	15
Belmont	443	477	452	432	446	448	437	442	450	461	421	436	421
Carroll	93	94	99	97	88	88	88	91	97	98	93	92	93
Columbiana	137	150	151	158	138	138	143	117	130	128	133	134	123
Coshocton	229	283	266	271	235	238	245	239	225	206	192	191	158
Guernsey	20	21	21	21	18	19	18	19	19	19	20	23	24
Harrison	179	203	209	217	179	175	174	147	174	174	159	166	170
Hocking	34	39	37	36	37	34	35	33	31	31	31	31	30
Holmes	31	30	30	30	29	28	30	31	31	32	34	33	33
Jackson	89	81	100	85	89	89	80	91	94	87	93	91	81
Jefferson	237	237	220	226	248	252	248	245	241	234	250	216	231
Lawrence	75	75	75	75	75	75	75	90	77	70	68	73	72
Mahoning	26	28	28	29	28	29	29	23	22	19	25	26	28
Meigs	561	567	561	562	566	558	557	557	558	560	561	562	563
Monroe	233	237	242	238	238	234	236	232	231	225	227	229	229
Morgan	4	0	0	4	9	9	9	6	6	4	1	2	1
Muskingum	57	103	102	101	41	41	41	35	35	35	50	49	50
Noble	382	345	350	352	402	410	400	412	392	400	386	379	355
Perry	270	288	286	297	293	295	287	274	269	266	271	268	136
Stark	27	29	29	29	28	27	27	24	27	28	24	25	25
Tuscarawas	219	227	216	213	211	208	179	183	204	193	257	274	261
Vinton	308	326	301	315	298	295	300	300	306	312	318	311	317
Washington	4	6	6	6	6	6	6	1	1	1	4	4	4
Wayne	4	4	4	4	3	4	3	4	4	4	5	5	5
TOTAL	3,685	3,879	3,815	3,828	3,735	3,730	3,677	3,613	3,642	3,602	3,639	3,636	3,425

¹Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.²For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.

TABLE 12.—1990 Ohio coal-mine employment¹ in central preparation plants, central shops, etc., by county and month

County ²	Number of employees												
	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
Belmont	88	96	90	85	86	94	87	86	90	87	94	87	80
Carroll	6	3	3	6	5	5	5	4	4	4	13	11	10
Columbiana	38	36	36	37	37	37	36	39	40	41	39	39	39
Coshocton	37	41	40	40	36	36	36	36	36	36	35	35	35
Harrison	23	28	29	30	22	20	18	21	19	21	25	23	22
Jackson	16	16	16	16	16	16	16	16	16	16	16	16	16
Jefferson	23	25	18	18	25	25	25	23	23	23	24	24	24
Lawrence	29	26	29	28	33	32	32	29	27	27	28	30	31
Mahoning	10	13	11	11	11	10	9	7	7	9	9	9	9
Meigs	67	53	54	54	72	71	72	71	72	72	72	72	72
Monroe	47	45	45	45	45	45	44	44	43	50	51	52	50
Morgan	3	0	0	2	5	5	5	3	4	4	1	1	1
Muskingum	26	50	49	47	18	16	16	14	14	14	24	24	24
Noble	204	186	186	184	218	206	204	208	215	215	208	208	208
Perry	39	43	42	41	42	42	42	39	40	41	40	43	10
Scioto	31	34	34	34	34	34	34	35	35	35	34	34	0
Tuscarawas	42	46	43	43	41	42	44	39	38	39	43	40	40
Vinton	104	87	88	88	104	104	103	107	106	105	119	120	120
TOTAL	833	828	813	809	850	840	828	821	829	839	875	868	791

¹Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.²For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.TABLE 13.—1990 Ohio coal-mine employment¹ in supervisory, technical, and clerical positions, by county and month

County ²	Number of employees												
	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
Belmont	170	161	169	166	166	166	171	175	177	171	169	174	174
Carroll	17	16	16	16	18	18	18	17	17	17	18	17	17
Columbiana	26	30	30	32	27	23	23	23	24	25	24	24	24
Coshocton	80	93	96	96	79	79	81	80	77	72	69	71	65
Gallia	2	2	2	2	2	2	2	2	2	2	2	2	2
Guernsey	5	7	7	7	4	4	4	3	3	3	4	4	4
Harrison	40	37	39	40	39	38	38	42	44	43	40	42	41
Hocking	5	5	5	5	5	5	5	5	5	5	5	5	5
Holmes	5	5	5	5	5	5	5	4	4	5	6	4	5
Jackson	21	16	16	16	19	19	17	30	29	27	23	23	23
Jefferson	53	57	52	53	51	51	49	59	58	57	53	46	51
Lawrence	10	11	11	11	8	8	8	11	11	11	10	10	10
Mahoning	5	5	5	5	5	5	5	4	4	5	7	7	7
Meigs	221	221	221	220	220	222	223	223	222	221	220	220	220
Monroe	77	76	77	77	76	77	77	77	77	77	77	77	77
Morgan	2	0	0	2	4	4	4	3	3	2	2	2	2
Muskingum	24	45	45	45	17	17	17	18	18	18	17	17	17
Noble	147	128	129	129	151	153	153	156	157	154	150	152	152
Perry	49	71	71	71	67	67	67	31	30	29	31	31	20
Scioto	5	5	5	5	5	5	5	5	5	5	5	5	0
Stark	14	11	11	11	13	13	13	15	15	16	16	15	15
Tuscarawas	56	60	56	58	56	58	55	50	51	51	57	62	61
Vinton	140	134	133	131	145	144	148	146	146	148	134	137	137
Washington	1	1	1	0	1	0	1	0	0	1	1	0	1
Wayne	1	1	1	1	1	1	1	1	1	1	0	1	0
TOTAL	1,176	1,198	1,203	1,204	1,184	1,184	1,190	1,180	1,180	1,166	1,140	1,148	1,130

¹Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.²For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.

TABLE 14.—1990 Ohio surface coal-mine reclamation employment¹, by county and month

County ²	Number of employees												
	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
Belmont	17	9	8	9	14	22	14	12	18	20	41	24	13
Carroll	3	3	2	2	2	3	2	6	3	3	2	2	2
Columbiana	8	3	3	3	8	8	7	14	14	14	8	8	8
Coshocton	4	2	3	3	8	8	8	2	4	2	0	3	3
Harrison	6	2	11	16	19	18	4	1	0	1	1	1	1
Jackson	3	3	3	3	4	4	4	3	3	3	3	3	3
Jefferson	3	0	0	0	6	7	8	2	3	2	3	3	3
Mahoning	2	0	0	0	0	0	0	6	6	6	0	0	0
Morgan	2	0	0	2	3	3	3	3	3	2	1	1	1
Muskingum	9	20	20	20	6	6	6	5	5	5	7	6	6
Noble	72	55	55	58	80	80	80	86	85	83	79	64	64
Stark	2	2	2	2	3	3	3	3	3	3	0	0	0
Tuscarawas	14	8	9	12	16	13	17	18	20	16	20	13	7
Vinton	3	1	1	1	4	4	4	2	2	2	3	3	3
Washington	1	0	0	0	0	0	0	5	6	2	2	0	0
TOTAL	149	108	117	131	173	179	160	168	175	164	170	131	114

¹Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.²For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.TABLE 15.—1990 Ohio coal-mine employment¹ in other positions², by county and month

County ³	Number of employees												
	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
Athens	1	1	1	1	1	1	1	1	1	1	1	1	1
Belmont	152	147	147	147	154	159	160	154	149	154	150	152	150
Carroll	2	2	2	2	2	2	2	2	2	2	2	2	2
Columbiana	3	1	1	1	6	4	6	0	0	0	6	6	4
Coshocton	6	5	5	5	6	6	6	5	5	5	8	8	7
Gallia	4	3	3	3	3	3	3	4	4	4	4	4	4
Jackson	23	23	23	23	20	20	20	25	25	25	25	25	25
Jefferson	2	0	2	2	0	0	0	5	6	5	0	0	0
Lawrence	6	7	7	10	3	5	5	8	7	6	6	6	6
Meigs	38	53	56	54	34	33	33	33	33	33	33	33	33
Monroe	12	11	11	12	12	12	12	12	12	12	12	12	12
Morgan	1	0	0	1	1	1	1	1	1	1	1	1	1
Muskingum	2	7	7	6	1	1	1	1	1	1	1	1	1
Noble	21	20	20	20	21	20	23	21	21	21	21	23	21
Perry	18	0	0	0	0	0	0	38	38	37	38	35	25
Stark	4	0	0	0	1	1	1	0	0	0	0	0	0
Tuscarawas	4	4	3	3	4	4	4	7	7	6	1	1	1
Vinton	24	37	40	38	22	22	22	18	18	18	18	18	18
TOTAL	318	321	328	328	291	294	300	335	330	331	327	328	311

¹Reflects employment as reported. Employment was not included for mines which were owner operated or where coal extraction was incidental to principal operation.²"Other positions" includes all employees who do not belong in any other employment category, such as mobile equipment operators, mechanics, or general outside workers.³For those operations reporting activity in more than one county, employment was evenly split (to the nearest whole employee) between the counties involved unless a by-county breakdown was provided by the operator.⁴Averages fewer than one employee per month.

TABLE 16.—1990 Wage and salary payments to Ohio coal-mine employees, by county and occupational group

County ¹	Wage and salary payments (nearest whole dollar) ²						
	All occupations	Underground production employees	Surface production employees	Central preparation plant, central shop, etc.	Supervisory, technical, and clerical	Reclamation	Other
Athens	\$647,547		\$637,507				\$10,040
Belmont	34,516,726	\$12,553,537	5,066,736	\$2,915,452	\$7,846,597	\$184,376	5,950,028
Carroll	3,480,798		2,602,877	127,609	678,898	70,854	560
Columbiana	7,011,591	2,582,114	1,931,474	1,298,190	947,559	164,693	87,561
Coshocton	14,982,541		10,163,151	1,103,541	3,504,011	49,897	161,941
Gallia	110,544				30,280		80,264
Guernsey	803,848		670,725		133,123		
Harrison	10,753,170	810,629	7,326,576	885,775	1,682,660	47,530	
Hocking	936,339		809,948		126,391		
Holmes	998,512		860,399		138,113		
Jackson	4,443,396		2,909,715	479,680	638,046	58,491	357,464
Jefferson	12,354,340		9,273,560	700,817	2,193,238	129,701	57,024
Lawrence	3,178,083		2,147,122	661,942	259,648		109,371
Mahoning	1,232,967		724,453	319,838	161,576	27,100	
Meigs	38,567,216	23,959,840		2,780,551	10,171,391		1,655,434
Monroe	17,306,102	10,233,185		2,339,904	3,984,086		748,927
Morgan	404,998		164,846	101,528	81,365	38,559	18,700
Muskingum	4,111,968		1,951,543	858,909	949,054	274,937	77,525
Noble	33,792,512		15,377,735	8,154,025	6,468,048	2,934,683	858,021
Perry	13,309,561	7,359,184	1,593,680	1,042,074	2,196,514		1,118,109
Scioto	1,766,504			1,535,920	230,584		
Stark	766,468		481,723		263,108	16,957	4,680
Tuscarawas	8,589,934		5,735,152	1,106,065	1,393,633	228,999	126,085
Vinton	23,389,037	8,626,249	2,968,676	3,582,300	7,139,935	25,135	1,046,742
Washington	288,136		203,419		26,980	57,737	
Wayne	128,846		106,044		22,802		
TOTAL	\$237,871,684	\$66,124,738	\$73,707,061	\$29,994,120	\$51,267,640	\$4,309,649	\$12,468,476

¹For those operations reporting activity in more than one county, wage and salary payments were evenly split between the counties involved unless a by-county breakdown was provided by the operator.

²For those operations reporting only a total wage and salary payment to all workers, an equal pay rate was assumed for all employees. In cases where quarterly employment was reported but wage and salary payments were not, wage and salary payments for that quarter were estimated from reported payments in the other quarters to arrive at the annual figure.



Dog team used to haul coal from a mine in Muskingum County, 1917.

INDUSTRIAL MINERALS

Industrial minerals, other than mineral fuels, were produced in a total of 86 Ohio counties in 1990. The combined value of all nonfuel industrial minerals sold in 1990 was \$433,643,025.

The average annual employment reported in 1990 for industrial mineral operations was 3,122 production employees and 1,264 nonproduction employees. In 1990, 322 companies produced or sold industrial minerals from 487 operations. Seventeen of these companies produced more than one mineral commodity from 21 operations.

The multiple-commodity operations employed 130 production workers and 15 nonproduction workers. Seven operations produced clay and shale and employed 39 production workers and 3 nonproduction workers; 2 operations produced limestone and shale and employed 15 production workers and no nonproduction workers; 4 operations produced limestone and clay and employed 40 production workers and 4 nonproduction workers; 1 operation produced sand and gravel and clay, but no employment infor-

mation was given because the operation is owner operated; 2 operations produced sandstone and sand and gravel and employed 12 production workers and 4 nonproduction workers; 2 operations produced sand and gravel and limestone and employed 17 production workers and 2 nonproduction workers; 1 operation produced sand and gravel and peat and employed 1 production worker; 1 operation produced limestone, sandstone, clay, and shale and employed 6 production workers and 2 nonproduction workers. The 130 multiple-commodity production employees worked an average of 202 days in 1990. Total wages reported in 1990 for 130 production employees and 15 nonproduction employees at multiple-commodity operations were \$2,347,363. The average annual wage was \$16,189.

The total reported wages for all employees at industrial mineral operations in 1990 were \$116,229,784. The average annual wage, based on those employees for whom wages were reported, was \$26,500.

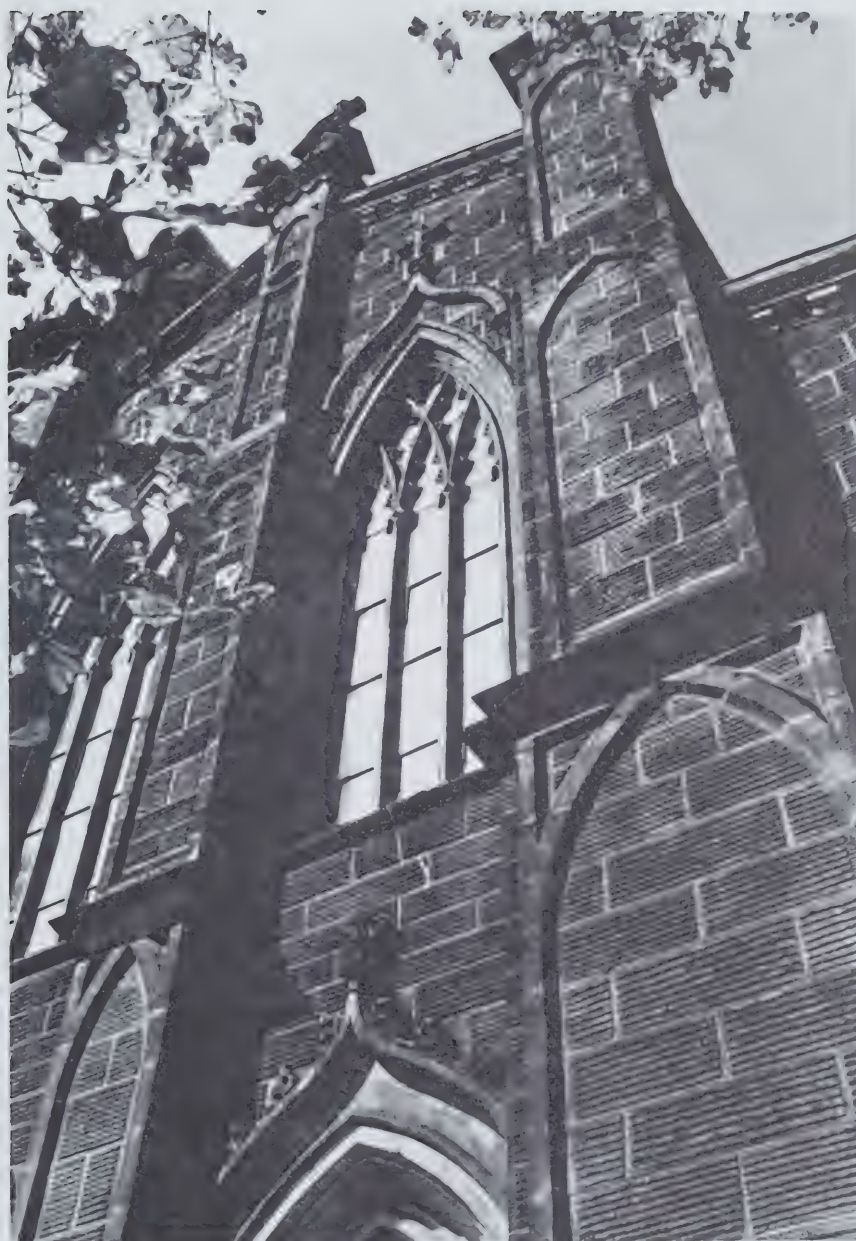
TABLE 17.—1990 Value of Ohio industrial minerals

Commodity	Sales (tons)	Change from 1989 (tons)	Value ¹ (dollars)	Percent of total value
Limestone and dolomite	52,697,852	+5,003,599	\$196,394,648	45.3
Sand and gravel	44,057,557	+3,037,787	154,163,522	35.6
Salt	4,138,417	-139,429	50,440,319	11.6
Sandstone and conglomerate	1,700,335	-94,109	23,851,907	5.5
Clay	1,577,853	+69,410	4,546,420	1.0
Shale	1,374,614	-547,914	2,031,350	0.5
Gypsum	204,539	32,500	1,943,121	0.4
Peat	45,697	+11,389	271,738	0.1
TOTAL	105,796,864	+7,308,233	\$433,643,025	100.0

¹The FOB value of industrial minerals sold was estimated for those mines which failed to report this information and for those producing material for captive use. These estimates were calculated using a countywide- or statewide-average price per ton based on reported FOB values.



Aerial view of Ohio State House, built between 1839 and 1861 of Columbus Limestone from the quarry of William Sullivant about 3 miles west of the building site. Photo taken in 1991.



St. Joseph Cathedral, downtown Columbus, built in the late 1800's of Black Hand Sandstone from quarries in Licking and Fairfield Counties. Photo taken in 1991.

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TABLE 18.—1990 Employment at Ohio industrial mineral operations, by county and commodity

County ¹	Number of employees ²													
	Total		Limestone and dolomite		Sand and gravel		Sandstone and conglomerate		Clay		Shale		Salt	
	Pro-duction	Non-pro-duction	Pro-duction	Non-pro-duction	Pro-duction	Non-pro-duction	Pro-duction	Non-pro-duction	Pro-duction	Non-pro-duction	Pro-duction	Non-pro-duction	Pro-duction	Non-pro-duction
Adams	20	29	20	29	4	3								
Allen	27	1	23	1	18	6					1	3		
Ashland	19	6			13	5								
Ashtabula	13	5	6		6	16			1					
Athens	13	16							1					
Auglaize	26	9	15	3	10	6								
Belmont	11	9	9	3	2	6								
Brown	2	2	2											
Butler	70	79	1	2	70	79	2	2						
Carroll	7	6			4	2								
Champaign	20	6			19	6								
Clark	35	17	2	2	33	15								
Clermont	7	5	17	9	7	5								
Clinton	17	9							2					
Columbiana	15	3			2						3			
Coshocton	53	31	11	3	11	23	30	5			1			
Crawford	46	46	46											
Cuyahoga	49	168			3	4					46	168		
Darke	11	7	8	3	3									
Defiance	3													
Delaware	72	10	72	10										
Erie	111	26	99	24	9 ⁴	1	3	1						
Fairfield	4	4	7	2	4	4								
Fayette	2	2	7	2										
Franklin	208	51	75	14	119	36							14	1
Fulton	5													
Gallia	4	8			4	8								
Geauga	29	66			18	4	11	62						
Greene	53	17	14	3	36	14			3					
Guernsey	4	2	4	2										
Hamilton	66	66	35	3	66	66								
Hancock	35	3	5	5										
Hardin	5	5												
Harrison	2	2			3									
Henry	3													
Highland	18	18	18	18										
Hocking	19	19			5	19								
Holmes	21	3			14	2			1	1			3	5
Huron	9	5			8	5	1							
Jackson	16	3	12						4	3				
Jefferson	5													
Knox	53	30			22	29	31	1					116	
Lake	122	3			4 ⁴	3			2				1	5
Lawrence	11	1			4	1			2					
Licking	32	15			29	13					2			

LIMESTONE AND DOLOMITE

Limestone and dolomite were sold or produced by 80 companies at 122 operations in 54 Ohio counties during 1990. Sales of limestone and dolomite totalled 52,697,852 tons; Erie, Franklin, Wyandot, Ottawa, and Sandusky Counties accounted for 37.2 percent of those sales. Reported known production totalled 55,001,240 tons.

Lime produced from Ohio limestone and dolomite totalled 1,433,482 tons in 1990, and came from four operations in Ottawa, Sandusky, and Wyandot Counties. Ohio ranks second nationally in the production of lime, following Missouri.⁴

⁴Information from U.S. Bureau of Mines.

⁵See footnote 1, p. 12.

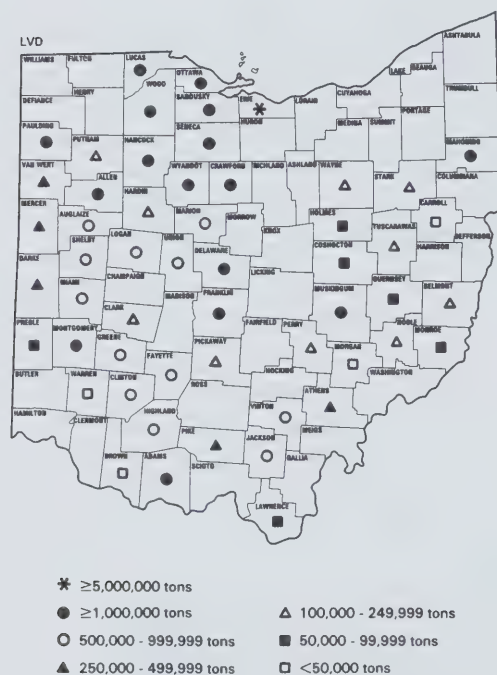


FIGURE 6.—Sales of limestone and dolomite in Ohio in 1990, by county.

The total value⁵ of limestone and dolomite sold in 1990 was \$196,394,648. Average price per ton was \$3.73.

An annual average of 1,370 employees worked an average of 211 days to produce limestone and dolomite. Total wages reported in 1990 for 1,370 production employees and 380 nonproduction employees were \$47,107,133. The average annual wage, based on those employees for whom wages were reported, was \$26,918. An additional 67 employees mined limestone and dolomite along with one or more other mineral commodities.

Primary uses for crushed and broken limestone and dolomite were road construction/resurfacing and building. Other major uses for various forms of limestone and dolomite included stone for portland cement concrete, stone for asphaltic concrete, portland cement manufacture, riprap, aglime (a noncalcined product), and railroad ballast.



FIGURE 7.—Sales and value of limestone and dolomite in Ohio. Value line dashed where data not available.

TABLE 19.—1990 Production of lime from Ohio stone, by county and type

County	Total tons	Building (tons)	Chemical and industrial (tons)	Refractory (tons)	Other (tons)
Ottawa	101,894	54,806	47,088		
Sandusky	1,223,289		938,484		284,805
Wyandot	108,299		108,299		
TOTAL	1,433,482 ¹	54,806	1,093,871	0	284,805

¹Burning produced a 50.0 percent weight loss.

TABLE 20.—1990 Ohio limestone and dolomite sales, by county and type

County	Tbns sold										
	Crushed and broken stone						Dimension stone	Stone for portland cement manufacture	Agricultural stone (aglime)	Raw stone for burning	Unspecified/other
	Total, all types	Total	Riprap	Flux stone	Stone for portland cement concrete	Stone for asphaltic concrete					
Adams	1,859,651	1,807,381	78,845	82,256	61,732	122,354	1,228,460	66,072	45,439	122,223	
Allen	1,317,436	1,313,575	1,535			21,000	12,600	871,849	210,988	195,603	
Athens	339,078	339,078	36,557	94,289			68,729			139,503	
Auglaize	585,442	582,486	14,733				282,656	284,800	297	2,956	
Belmont	135,932	135,932	21,903				114,029				
Brown	4,716	4,716					4,716				
Carroll	4,084	4,084					4,084				
Clark	121,142	121,142					121,142				
Clinton	715,698	702,791	40,372		97,458	121,669	86,786	272,513		12,907	
Coshocton	87,443	87,443					79,398				
Crawford	1,271,069	1,213,970	8,001	200,434			400,707	896,278	401	57,099	
Darke	400,707	400,707									
Delaware	2,908,589	2,903,258	56,776	40			822,196	1,646,725	196	5,081	
Erie	5,031,762	4,880,963	97,696		1,114,594	571,906	2,838,354	201,125	201,125	82,258	
Fayette	544,084	525,895	8,795				445,524	31,226	9,960	18,189	68,541
Franklin	4,311,825	4,311,825	1,492				4,068,285	242,048			
Greene	947,330	586,912					586,912			360,418	
Guernsey	95,079	95,079					95,079				
Hancock	1,249,756	1,246,596	1,789		15,900		90,000	531,406	607,501	3,160	
Hardin	188,454	179,886	163				61,113	118,610		8,568	
Highland	929,220	875,139	14,154		15,658	54,944	786,772		616	54,081	
Holmes	87,240	87,240					87,240				
Jackson	783,061	783,061					70,558			104	
Lawrence	75,962	75,858	5,300				110,466	92,607			
Logan	678,217	678,217	21,153		111,131	55,649					
Lucas	2,482,425	2,101,692	130,730		130,732	130,733	1,448,031	130,733		130,733	
Mahoning	1,978,616	1,978,616					38,647	38,732			
Marion	840,420	827,725	8,988		20,781	11,686	201,338	559,789	906	12,715	
Mercer	427,181	382,781	44,398		44,398	34,756	44,396	44,396	44,399	44,400	
Miami	682,404	617,718	3,988	82,090	31,145	20,223	436,554	44,396	2,799	44,766	16,772
Monroe	72,350	72,350									
Montgomery	1,085,643	877,546					877,546			208,097	
Morgan	17,680	17,680					17,680				
Muskingum	2,051,688	1,346,716	91,415		91,417	100,537	1,063,347			613,555	
Noble	176,507	57,092	1,260				45,780				
Ottawa	3,341,155	3,098,284	272,538	82,464	352,010	271,417	1,868,711	50,619	50,618	39,173	203,698
Paulding	1,452,167	727,362	52,828	50,619	50,618	50,619	370,822			50,620	
Perry	221,906	221,906					221,906				
Pickaway	217,037	217,037	117		32,594	47,365	43,334	49,217	3,104	21,146	
Pike	268,357	247,211	19,123			14,106	207,562				
Preble	82,876	79,574	9,820				66,963				
Putnam	202,258	202,258	1,367		25,667		175,224				
Sandusky	3,206,527	490,522	298,531	11,608	13,377	1,864	140,844	13,234		251,310	2,464,695
Seneca	1,506,470	1,343,187	23,141		19,330	47,668	1,253,058			156,648	
Shelby	556,861	556,861	60,482			34,818	261,242	144,601	44,292		
Stark	117,896	117,896					117,896				
Tuscarawas	148,889	148,889	4,242				121,895				
Union	661,575	465,850	785		9,300	18,599	101,290			41,245	154,480
Van Wert	459,340	412,589	46,890		70,534	51,242	116,678			126,751	
Vinton	513,642	462,773					314,837			50,869	
Warren	41,921	41,921					41,921				
Wayne	206,750	206,750					206,750				
Wood	1,275,483	1,162,182	156,713		147,494	147,496	405,304	1,576,756	130,547	113,301	199,638
Wyandot	3,728,851	3,362,694	93,975	552,359	244,690	270,059	253,193			166,519	
TOTAL	52,697,852	45,798,876	1,730,593	1,156,159	2,700,560	2,245,096	22,928,557	7,662,211	1,353,649	1,562,147	489,793

SAND AND GRAVEL

Sand and gravel were sold or produced by 218 companies at 287 operations in 62 Ohio counties during 1990. Sales⁶ of sand and gravel totalled 44,057,557 tons, of which sand comprised 22,442,812 tons and gravel comprised 21,614,745 tons. Ohio ranks fourth nationally in the production of sand and gravel, following California, Michigan, and Texas.⁷ Hamilton, Portage, Butler, Franklin, and Greene Counties led in sales, accounting for 45.0 percent of the total. Reported known production⁶ of sand and gravel totalled 46,641,588 tons in 1990.

⁶Please note—Sales and production figures for sand include material dredged from Lake Erie.

⁷Information from U.S. Bureau of Mines.

⁸Includes reported and estimated values. See footnote 1, p. 12.

A total of 258,751 tons of sand were dredged from Lake Erie. No gravel was dredged from Lake Erie in 1990. There was no dredging activity in the Maumee River.

The total value⁸ of sand and gravel sold in 1990 was \$154,163,522. Average price per ton was \$3.50.

An annual average of 1,151 employees worked an average of 189 days in 1990 to produce sand and gravel. Total wages of \$45,997,390 were reported for 1,151 production employees and 596 nonproduction employees. The average annual wage, based on those employees for whom wages were reported, was \$26,329. An additional 30 employees mined sand and gravel along with one or more other mineral commodities.

Road construction/resurfacing, building, portland cement concrete, and asphaltic concrete were the major uses for Ohio sand and gravel in 1990.

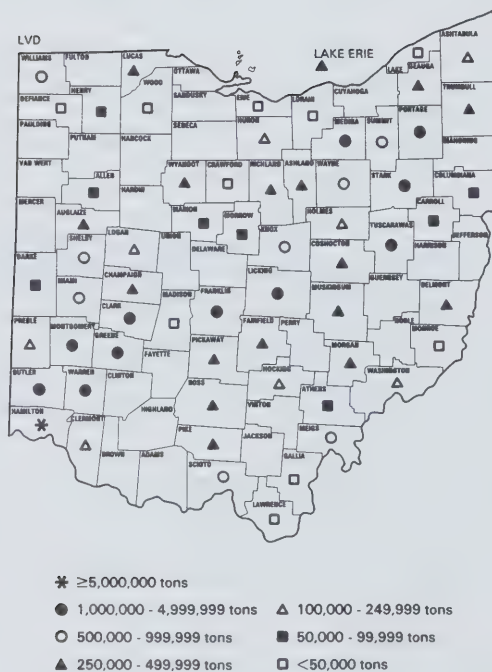


FIGURE 8.—Sales of sand and gravel in Ohio in 1990, by county.

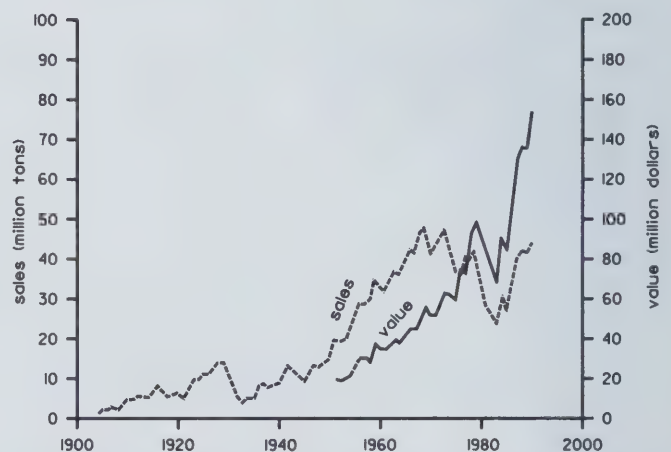


FIGURE 9.—Sales and value of sand and gravel in Ohio. Value line dashed where data not available. Figures from 1984 to 1990 include Lake Erie and Maumee River dredged material.



Keener sand mine, Gallia County, *circa* 1916.



Molding sand pit of Ayers Mineral Co. near South Zanesville
Muskingum County, *circa* 1917.

TABLE 21.—1990 Ohio sand and gravel sales, by county and type

County	Tons sold															
	Total sand and gravel	Total sand	Total gravel	Building		Portland cement concrete		Asphaltic concrete		Road construction/ resurfacing		Filtration		Foundry sand	Other/ unspecified	
				Sand	Gravel	Sand	Gravel	Sand	Gravel	Sand	Gravel	Sand	Gravel		Sand	Gravel
Allen	70,622	40,778	29,844		29,083									11,550	16,331	761
Ashtland	301,879	98,339	203,540	35,486	77,931										79,995	31,888
Ashtabula	248,971	129,994	118,977	6,845	34,578	23,000									17,639	72,380
Athens	66,171	40,999	25,172												24,955	241
Auglaize	317,691	164,017	153,674	4,331		134,731	136,749									16,925
Belmont	373,452	230,608	142,844			66,227	41,323								15,701	15,701
Bulter	4,197,723	1,684,347	2,513,376	180,115	490,398	67,706	36,945								444,397	447,405
Carroll	91,296	45,982	45,314												21,660	85,742
Champaign	419,123	142,850	276,273	35,200	66,792										1,200	105,490
Clark	1,365,240	500,255	864,985	31,207	187,858	127,362	123,864								57,081	58,733
Clermont	115,814	57,081	58,733												45,391	52,348
Columbiana	97,739	45,391	52,348												3,526	13,537
Coshocton	490,834	257,435	233,399	31,853	21,417	63,715	56,008							541	380	380
Crawford	760	380	380												26,254	26,976
Darke	53,230	26,254	26,976													
Defiance	15,843		15,843													
Erie	24,486	21,772	2,714		2,714									1,651	20,121	8,353
Fairfield	386,044	220,003	166,041	13,127	27,433	112,800	18,375								17,326	
Franklin	3,766,543	1,478,505	2,288,038	151,793	744,459	240,821	108,880							279	1,680	
Gallia	14,739	11,202	3,537	787											10,136	3,537
Geauga	394,033	287,128	106,905	158,280	56,816	83,935									7,141	3,034
Greene	1,800,218	713,487	1,086,751	52,462	207,747	48,832	61,704								214,699	236,719
Hamilton	5,767,261	3,049,537	2,717,724	299,563	655,515	351,802	176,685								695,029	295,959
Henry	90,380	90,380														
Hocking	135,300	74,800	60,500			20,000	5,000								53,500	53,000
Holmes	230,527	80,066	150,461	1,629	4,724	29,038	57,339								16,609	21,169
Huron	105,006	93,679	11,327	38,681	8,809	47,752									4,252	1,352
Knox	881,393	400,000	481,393	13,850	56,630	42,625	3,200								206,035	257,908
Lake	37,100	27,250	9,850		3,300	6,500									1,200	
Lawrence	21,010	21,010													21,010	
Licking	1,230,491	557,285	673,206	119,696	195,163	34,500	12,000								10,184	16,636
Logan	201,439	121,596	79,843	13,805	2,418	51,461									56,330	77,425
Loran	2,591	2,591													2,591	
Lucas	289,145	228,410	60,735	142,554											85,856	60,735
Madison	42,974	21,487	21,487												21,487	21,487
Marion	95,034	45,164	49,870	24,847											20,313	49,870
Medina	1,031,342	756,030	275,312	165,515	133,213	3,739									60,268	
Meigs	692,537	403,986	288,551	63,317	102,243										1,053	2,534
Miami	693,842	258,737	435,105	5,496	61,220										76,486	117,997
Monroe	5,178	2,590	2,588												2,590	2,588

Montgomery	1,596,427	590,476	1,005,951	47,068	179,238	135,538	163,972	75,177	84,474	184,924	267,130	40,215	4,690	147,769	306,447
Morgan	354,393	248,004	106,389	34,663	14,856	57,708	24,732	57,709	24,733	57,709	24,733	2,261	17,235		100
Morrow	93,306	22,872	70,434	20,574	30,516	23,245	19,746	122,707	46,160	8,774	156,591	854	3,814	96,118	4,517
Muskingum	441,406	251,698	189,708											13,165	14,456
Pickaway	293,030	121,983	171,047											44,443	44,442
Pike	346,411	235,698	110,713	21,688	19,343	132,795	7,195	30,700	33,400	6,072	5,408		925	707,154	388,325
Portage	4,401,131	2,969,585	1,431,546	714,091	497,556	823,954	145,376	363,169	248,003	361,217	152,286			500	500
Preble	116,333	23,434	92,899	9,173	27,720	4,586	18,480	2,294	9,240	6,881	36,959			8,622	14,662
Richland	340,972	65,037	275,935	35,340	238,667	212	236	20,863	5,998		16,372			100,000	100,661
Ross	259,810	149,292	110,518	39,983	400		1,203		1,034	9,309	7,220			30,955	3,652
Scioto	818,638	698,158	120,480	30,562	11,386	330,313	2,351	269,994	43,104	36,334	59,987			180,589	195,917
Shelby	836,309	409,894	426,415	5,000	5,000	145,924	147,118	60,000	60,000	18,381	18,380			324,692	399,277
Stark	1,664,467	777,344	887,123	114,593	29,373	131,779	122,116	161,169	185,189	45,111	151,168			128,555	110,081
Summit	818,716	518,663	300,053	334,487	150,077	26,500	15,888			27,911	14,307	1,210	9,700	28,314	
Trumbull	447,875	404,488	43,387	109,212	34,710	93,032		161,795		12,135	8,677				
Tuscarawas	1,653,678	804,884	848,794	249,337	223,885	134,757	61,050	139,796	156,831	242,317	337,252			38,677	63,223
Warren	1,500,063	540,913	959,150	20	7,040					124,276	182,573			416,617	769,537
Washington	226,554	91,595	134,959	35,314	74,513			14,677	15,548	9,140	6,765	282		31,813	38,133
Wayne	564,279	296,352	267,927	42,290	129,517	61,250	19,258	49,528	60,000	17,370	27,776			125,914	31,376
Williams	551,699	318,622	233,077	12,059	69,644	206,417		49,248			49,248	651		50,247	114,185
Wood	3,384													3,384	
Wyandot	304,924	210,300	94,624	41,483	8,029	158,351	74,642	568	4,012	3,418	1,873	6,480	6,068		
Lake Erie	258,751	258,751				170,300		45,977		42,474					
TOTAL	44,057,557	22,442,812	21,614,745	3,487,376	4,921,931	4,193,207	1,661,435	3,207,413	1,853,563	6,356,505	8,165,007	361,688	165,957	4,822,233	4,846,852

TABLE 22.—1990 Ohio Lake Erie and Maumee River sand and gravel production

	Area	Production ¹	
		Cubic yards	Short tons
Lake Erie			
Fairport (sand)		96,137	129,785
Maumee Bay		²	
Vermilion-Lorain Inner (sand)		94,690	127,832
Vermilion-Lorain Outer (sand)		840	1,134
Maumee River			
Sand		²	
Gravel		²	
TOTAL		191,667	258,751

¹Production reported in cubic yards; converted to tons in the ratio of 1 cubic yard equals 1.35 short tons.

²No production reported for 1990.

SANDSTONE AND CONGLOMERATE

Sandstone and conglomerate were sold or produced by 16 companies at 26 operations in 17 Ohio counties during 1990. Sales totalled 1,700,335 tons; Geauga, Ross, Perry, Knox, and Columbiana Counties accounted for 84.2 percent of that total. Crushed sandstone and conglomerate accounted for 1,633,093 tons, and dimension stone accounted for 67,242 tons of the total sales. Reported known production of sandstone and conglomerate was 1,979,604 tons in 1990.

The total value⁹ of sandstone and conglomerate sold in

1990 was \$23,851,907. Average price per ton was \$14.31 for crushed stone and \$30.01 for dimension stone.

An annual average of 182 employees worked an average of 125 days in 1990 to produce sandstone and conglomerate. Total wages earned in 1990 by 182 production employees and 87 nonproduction employees were \$6,704,643. The average annual wage in 1990 was \$24,924. An additional 18 employees mined sandstone and conglomerate along with one or more other mineral commodities.

Crushed stone was used primarily for glass sand, aggregate, and foundry sand. Dimension stone was used primarily for rough construction, rough architectural purposes, rubble, and finished stone.

⁹Includes reported and estimated values. See footnote 1, p. 12.



FIGURE 10.—Sales of sandstone and conglomerate in Ohio in 1990, by county.

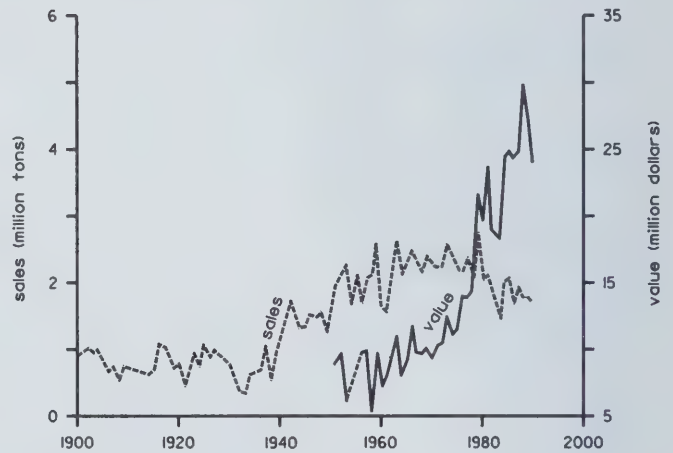


FIGURE 11.—Sales and value of sandstone and conglomerate. Value line dashed where data not available.

TABLE 23.—1990 Ohio sales of crushed sandstone and conglomerate, by county and type

County	Tons sold												
	Total	Foundry sand	Glass sand	Metallurgical pebble	Refractory	Riprap	Aggregate	Silica flour	Polishing/ grinding sand	Fire and furnace sand	Engine sand	Frac sand	Other/ unspecified
Carroll	10					10							
Columbiana	95,057						77,284						17,773
Geauga	680,265	154,777	84,323	128,786	5,500	200	109,549		31,200	10,625	8,700	9,247	137,358
Huron	7,532					7,532							
Knox	134,748	21,325	51,705					50,404			4,760	5,387	1,167
Lorain	46,395						46,395						
Mahoning	33,398												33,398
Perry	247,493	47,499	102,621					82,371				3,457	11,545
Pike	16,036			16,036									
Ross	273,176	68,594	83,934						3,231		26,179		91,238
Summit	38,895						38,895						
Trumbull	23,955						23,955						
Tuscarawas	36,133					6,633				29,500			
TOTAL	1,633,093	292,195	322,583	144,822	5,500	14,375	296,078	132,775	34,431	40,125	39,639	18,091	292,479

TABLE 24.—1990 Ohio sales of dimension sandstone and conglomerate, by county and type

County	Tons sold									
	Total	Refractory	Rough construction	Rubble	Grindstones	Rough architectural	Finished	Curbing	Flagging	Other/ unspecified
Carroll	1,630			88			1,542			
Coshocton	22,573					22,573				
Erie	2,418	46		1,420			903		49	
Geauga	1,200					1,200				
Holmes	860					860				
Knox	140					140				
Lorain	10,153	284		5,962	15		3,662		230	
Scioto	28,268		28,268							
TOTAL	67,242	330	28,268	7,470	15	24,773	6,107	0	279	0

CLAY

Clay was produced by 27 companies at 34 operations in 17 Ohio counties during 1990. Clay sales (including material for captive use) totalled 1,577,853 tons; Tuscarawas, Ross, Paulding, Greene, and Lawrence Counties accounted for 80.9 percent of the total sales. Ohio ranks third nationally in the production of common clay, following Texas and North Carolina.¹⁰ The total value¹¹ of clay sold in 1990 was

\$4,546,420. Average price per ton was \$2.88. Reported known production of clay was 1,580,163.

An annual average of 54 employees worked an average of 89 days in 1990 mining clay. Total wages reported in 1990 for 54 production employees and 5 nonproduction employees were \$858,754. The average annual wage, based on those employees for whom wages were reported, was \$14,555. An additional 79 employees mined clay along with one or more other mineral commodities.

Clay mined in Ohio in 1990 was largely for captive use in the production of common clay products and cement manufacture.

¹⁰Information from U.S. Bureau of Mines.

¹¹Includes reported and estimated values. See footnote 1, p. 12.

TABLE 25.—1990 Ohio clay sales, by county and type

County	Tons sold						
	Total	Common clay products	Glazed ware	Vitrified products	Cement manufacture	Refractories	Other/unspecified
Athens	210						210
Auglaize	4,750	4,750					
Columbiana	56,381						56,381
Geauga	82						82
Greene	127,841				127,841		
Hocking	26,958			26,958			
Holmes	17,953	17,953					
Jackson	26,837	26,837					
Lake	32,000						32,000
Lawrence	63,376	13,894				34,590	14,892
Muskingum	16,178	9,842		6,336			
Paulding	182,530				182,530		
Perry	55,018	55,018					
Ross	200,000						200,000
Stark	37,371	18,729					18,642
Tuscarawas	702,093	364,701		46,594		69,775	221,023
Wyandot	28,275	28,275					
TOTAL	1,577,853	539,999	0	79,888	310,371	104,365	543,230

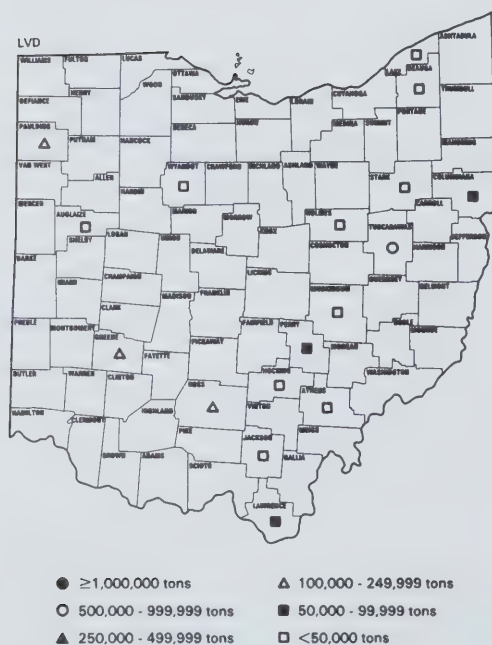


FIGURE 12.—Clay sales in Ohio in 1990, by county.

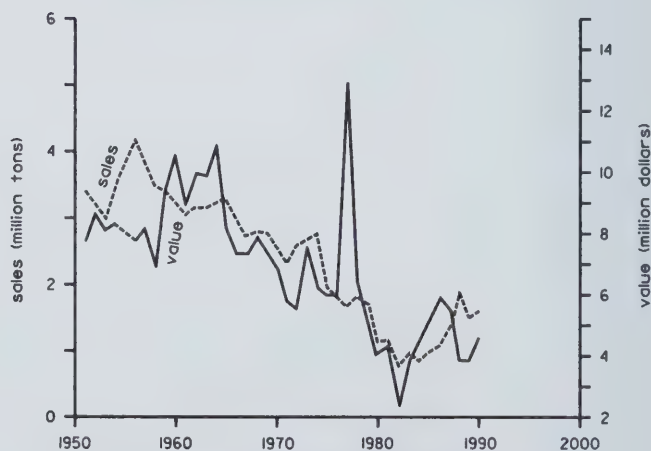


FIGURE 13.—Sales and value of clay in Ohio. Value line dashed where data not available.

SHALE

Shale was produced by 17 companies at 27 operations in 16 Ohio counties during 1990. Sales totalled 1,374,614 tons, and production totalled 1,372,909 tons. Tuscarawas, Cuyahoga, Marion, Mahoning, and Medina Counties accounted for 87.7 percent of the total sales. The total value¹² of shale sold (including material for captive use) in 1990

¹²Includes reported and estimated values. See footnote 1, p. 12.

was \$2,031,350. Average price per ton was \$1.48.

An annual average of 44 employees worked an average of 130 days in 1990 mining shale. Total wages reported in 1990 for 44 production employees and 4 nonproduction employees were \$1,037,036. The average annual wage, based on those employees for whom wages were reported, was \$21,605. An additional 40 employees mined shale along with one or more other mineral commodities in 1990.

Shale mined in Ohio in 1990 was largely for construction, captive use in the production of common clay products, and lightweight aggregate.

TABLE 26.—1990 Ohio shale sales, by county and type

County	Tons sold					
	Total	Common clay products	Vitrified products	Cement manufacture	Lightweight aggregate	Other/unspecified
Ashland	1,150	1,150				
Ashtabula	180				180	
Columbiana	35,725	34,151				1,574
Coshocton	3,850	3,850				
Cuyahoga	234,832				234,832	
Harrison	28,053		28,053			
Hocking	24,028		15,028			9,000
Holmes	16,169	16,169				
Licking	25,095		25,095			
Mahoning	93,073				93,073	
Marion	194,920	194,920				
Medina	47,847	47,847				
Muskingum	12,891			12,891		
Noble	1,775	1,040				735
Richland	20,000	20,000				
Tuscarawas	635,026	297,031	6,457			331,538
TOTAL	1,374,614	616,158	74,633	12,891	328,085	342,847



FIGURE 14.—Shale sales in Ohio in 1990, by county.

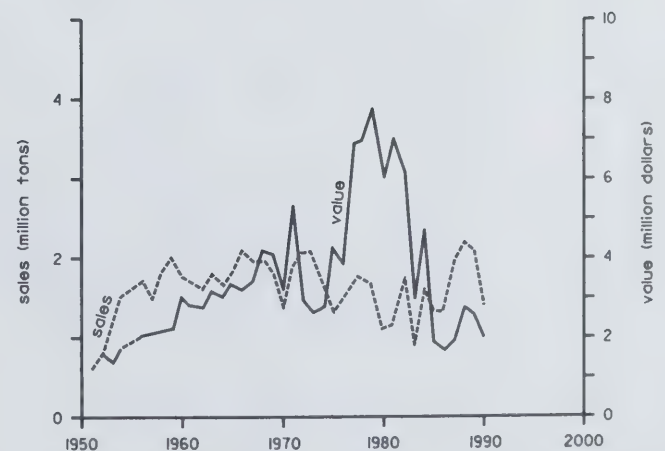


FIGURE 15.—Sales and value of shale in Ohio. Value line dashed where data not available.

SALT

Salt was produced by 3 companies at 5 operations in 5 Ohio counties during 1990. Ohio is the fourth-largest salt-producing state in the nation, following Louisiana, Texas, and New York. Ohio accounts for 11 percent of the nation's annual salt production.¹³ Rock salt sales totalled 3,433,914 tons from two underground mines, one each in Cuyahoga and Lake Counties. Three brining operations, one each in Licking, Summit, and Wayne Counties, sold a total of 9,397 tons of salt in brine and 695,106 tons of evaporated salt. Reported known production of salt was 4,374,985 tons in 1990. Total sales of salt in 1990 amounted to 4,138,417 tons with a total value of \$50,440,319. Average price per ton for all salt sold in 1990 was \$12.19. Average price per ton of rock salt was \$12.60 and of salt in brine and evaporated salt was \$10.19.

An annual average of 176 employees worked an average of 322 days in 1990 to produce salt. Total wages in 1990 for 176 production employees and 174 nonproduction employees were \$13,934,688. The average annual wage in 1990 was \$39,813. The primary use for Ohio salt in 1990 was ice control. Salt was also used as an additive in animal feed, for cattle blocks, and as a commercial and residential water-softening agent.

GYPSUM

Gypsum was produced by 1 company at 1 operation in

¹³Information from U.S. Bureau of Mines.

¹⁴Includes reported and estimated values. See footnote 1, p. 12.

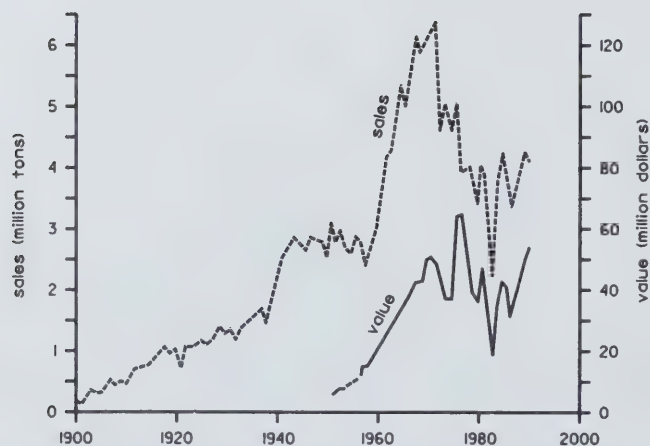


FIGURE 16.—Sales and value of salt in Ohio. Value line dashed where data not available.

Ottawa County during 1990. Gypsum production and sales (all material was for captive use) totalled 204,539 tons. Ohio ranks fourteenth nationally in gypsum production.¹³ The reported value¹⁴ of the gypsum sold was \$1,943,121. Average price per ton was \$9.50.

An annual average of 13 employees worked 277 days in 1990 producing gypsum. Total wages reported in 1990 for 13 production employees and 2 nonproduction employees were \$318,402. The average annual wage in 1990 was \$21,227. The sole use of gypsum from this operation is for the manufacture of wallboard.

PEAT

Peat was produced or sold by 4 companies at 4 operations in 3 Ohio counties during 1990. Peat sales (including material for captive use) totalled 45,697 tons. Champaign, Portage, and Williams Counties accounted for 100 percent of the total sales. The total value of the peat sold in 1990 was \$271,738. Average price per ton was \$5.95. Reported known production was 38,690 tons.

An annual average of 2 employees worked 60 days in 1990 producing peat. Total wages reported in 1990 for 2 production employees and 1 nonproduction employee were \$59,700. The average annual wage in 1990 was \$19,900. One additional employee produced peat along with one or more other mineral commodities. Most peat operations are owner operated. Therefore, reported employment information is limited.

Peat produced in Ohio was used for mulch, worm culture, and legume inoculation.

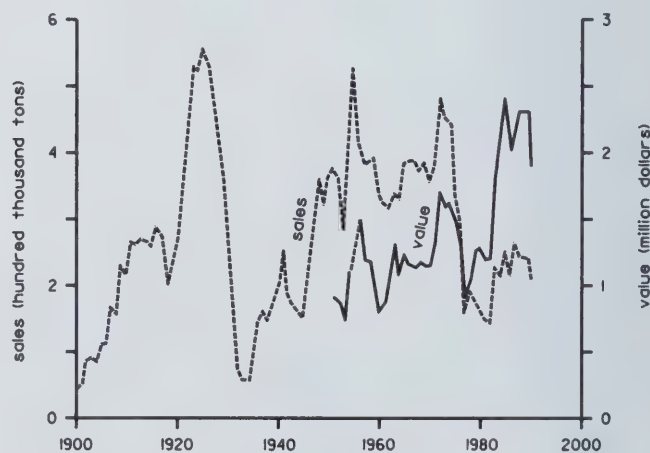


FIGURE 17.—Sales and value of gypsum in Ohio. Value line dashed where data not available. Some figures were calculated because actual figures were not reported in order to maintain confidentiality.

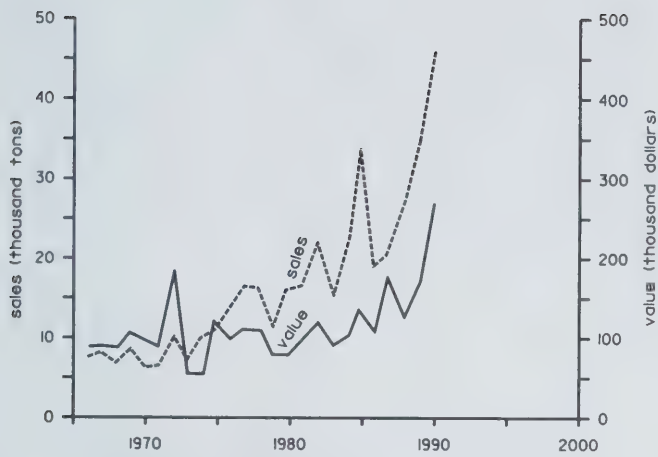


FIGURE 18.—Sales and value of peat in Ohio.

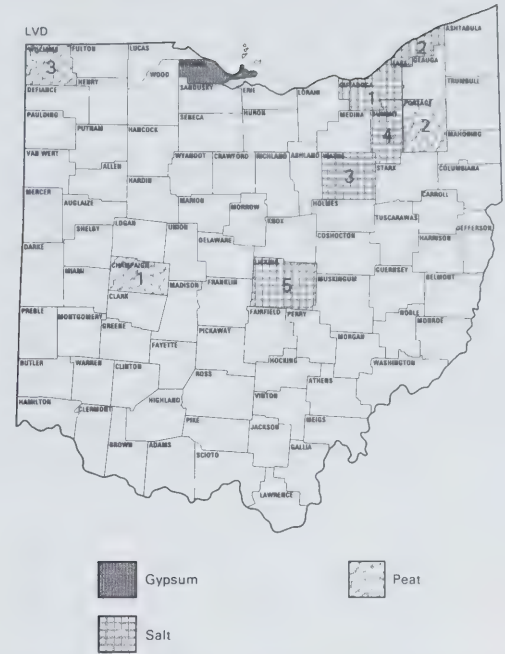
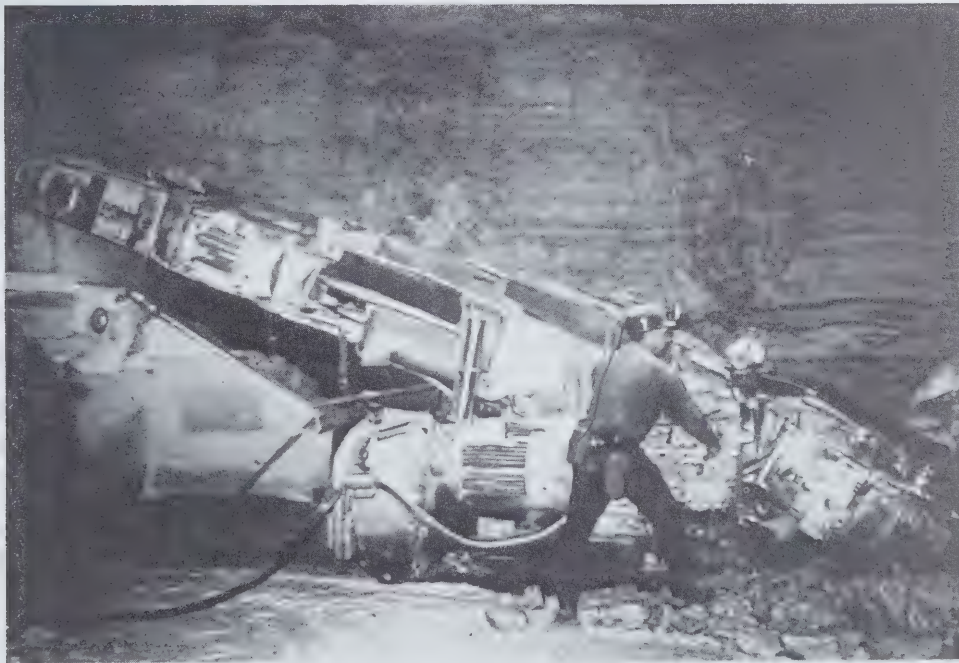


FIGURE 19.—Counties producing salt, gypsum, and peat in Ohio in 1990, and their ranking in sales.



Loading salt in the International Salt Co. mine (now Akzo Salt, Inc.), Cleveland, Cuyahoga County, 1970.

OIL AND GAS

This information is summarized from M. P. McCormac, 1991, 1990 Ohio oil and gas developments: Ohio Department of Natural Resources, Division of Oil and Gas

The Division of Oil and Gas issued 1,699 drilling permits for oil and gas in 1990; the Division estimates that 1,306 wells were actually drilled in 1990. Wells were drilled and completed in 40 of Ohio's 88 counties. The Division of Oil and Gas received 1,143 well completion reports; 976 wells were productive and 167 were dry holes for a completion rate of 85.4 percent.

The total reported crude oil production in Ohio in 1990 was 10,008,263 barrels, a 2 percent decline from 1989. A milestone was reached in 1990 when cumulative oil production exceeded the billion-barrel mark; through 1990, Ohio wells have produced 1,001,530,384 barrels. The dollar value of crude oil produced in Ohio in 1990 was \$231,240,162,

an increase of 25 percent. Average price per barrel in 1990 was \$23.10, a 28 percent increase from the 1989 price.

Natural gas production in Ohio in 1990 was 154,618,630 MCF, a 3 percent decline from 1989. This production figure includes an estimated 1,515,869 MCF of gas used on the lease. The dollar value of natural gas produced in Ohio in 1990 was \$393,043,833, a decrease of 4 percent from 1989. The value of the estimated volume of gas used on the lease was not used in computing this value. The average price per MCF in 1990 was \$2.54, one cent less than in 1989.

The combined total value of Ohio oil and gas production in 1990 was \$624,283,995, an increase of 5 percent from 1989, the first increase in five years.



FIGURE 20.—Production of oil and gas in Ohio.

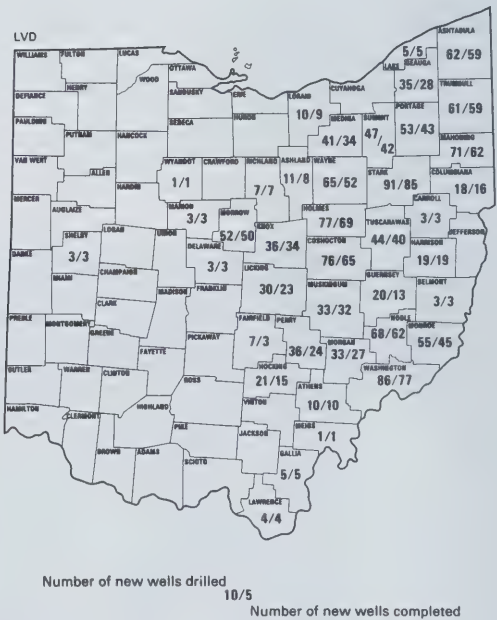


FIGURE 21.—New wells drilled for oil and gas in 1990, by county.

TABLE 27.—1990 Ohio summary of new oil and gas well completions by county

County ¹	Development wells		Exploratory wells		Total wells	Percent productive	Drilled footage		
	Productive	Dry	Productive	Dry			Productive	Dry	Total
Ashland	5	1	0	2	8	62.50	5,676	11,391	17,067
Ashtabula	47	4	0	8	59	79.66	187,197	75,306	262,503
Athens	6	2	1	1	10	70.00	22,555	4,983	27,538
Belmont	3	0	0	0	3	100.00	7,155	0	7,155
Carroll	3	0	0	0	3	100.00	16,189	0	16,189
Columbiana	13	1	1	1	16	87.50	81,895	11,854	93,749
Coshocton	36	17	1	11	65	56.92	179,309	186,224	365,533
Delaware	0	1	0	2	3	0.00	0	10,383	10,383
Fairfield	2	0	1	0	3	100.00	10,111	0	10,111
Gallia	5	0	0	0	5	100.00	10,929	0	10,929
Geauga	28	0	0	0	28	100.00	106,401	0	106,401
Guernsey	9	0	0	4	13	69.23	31,827	29,980	61,807
Harrison	19	0	0	0	19	100.00	111,627	0	111,627
Hocking	14	0	0	1	15	93.33	43,349	4,901	48,250
Holmes	51	9	2	7	69	76.81	247,255	101,243	348,498
Knox	24	4	1	5	34	73.53	72,681	35,013	107,694
Lake	4	1	0	0	5	80.00	12,171	3,683	15,854
Lawrence	1	1	0	2	4	25.00	860	2,444	3,304
Licking	19	0	3	1	23	95.65	68,472	4,762	73,234
Lorain	6	2	0	1	9	66.67	10,940	6,911	17,851
Mahoning	60	0	2	0	62	100.00	334,583	0	334,583
Marion	0	0	0	3	3	0.00	0	7,296	7,296
Medina	26	3	2	3	34	82.35	94,446	19,984	114,430
Meigs	1	0	0	0	1	100.00	1,660	0	1,660
Monroe	45	0	0	0	45	100.00	107,397	0	107,397
Morgan	24	0	3	0	27	100.00	100,491	0	100,491
Morrow	19	27	2	2	50	42.00	78,526	103,060	181,586
Muskingum	24	1	3	4	32	84.38	130,271	31,753	162,024
Noble	60	2	0	0	62	96.77	212,675	7,376	220,051
Perry	21	2	0	1	24	87.50	64,011	8,475	72,486
Portage	39	0	2	2	43	95.35	194,018	14,950	208,968
Richland	1	3	1	2	7	28.57	8,523	21,684	30,207
Shelby	3	0	0	0	3	100.00	3,855	0	3,855
Stark	75	0	2	8	85	90.59	363,406	50,733	414,139
Summit	41	0	0	1	42	97.62	165,409	6,880	172,289
Trumbull	59	0	0	0	59	100.00	285,217	0	285,217
Tuscarawas	35	2	0	3	40	87.50	183,163	35,064	218,227
Washington	75	0	2	0	77	100.00	411,628	0	411,628
Wayne	42	3	2	5	52	84.62	165,488	44,863	210,351
Wyandot	0	0	0	1	1	0.00	0	2,052	2,052
TOTAL	945	86	31	81	1,143	85.39	4,131,366	843,248	4,974,614

¹No well completions were reported for the following counties in 1990: Adams, Allen, Auglaize, Brown, Butler, Champaign, Clark, Clermont, Clinton, Crawford, Cuyahoga, Darke, Defiance, Erie, Fayette, Franklin, Fulton, Greene, Hamilton, Hancock, Hardin, Henry, Highland, Huron, Jackson, Jefferson, Logan, Lucas, Madison, Mercer, Miami, Montgomery, Ottawa, Paulding, Pickaway, Pike, Preble, Putnam, Ross, Sandusky, Scioto, Seneca, Union, Van Wert, Vinton, Warren, Williams, and Wood.

TABLE 28.—1990 Ohio summary of new oil and gas well completions by producing zone

Producing zone	No. of producing wells	No. of dry holes	Total no. of wells	Total footage	Percent productive
Pennsylvanian undifferentiated	2	6	8	5,183	25.00
Upper Mississippian undifferentiated	4	0	4	7,563	100.00
Lower Mississippian "1st & 2nd Berea"	37	7	44	54,777	84.09
Devonian Ohio Shale	84	0	84	191,851	100.00
Silurian Bass Islands	0	1	1	2,874	0.00
"Newburg"	0	1	1	4,537	0.00
"Clinton-Medina"	769	10	779	3,486,872	98.72
Lower Ordovician Trenton-Black River	4	0	4	11,305	100.00
Rose Run	41	82	123	816,396	33.33
Cambrian Trempealeau	35	52	87	353,765	40.23
Kerbel-Rome	0	6	6	27,074	0.00
Precambrian	0	2	2	12,417	0.00
TOTAL	976	167	1,143	4,974,614	85.39

TABLE 29.—Ohio counties¹ and their state mine number abbreviations²

County	Abbreviation	County	Abbreviation	County	Abbreviation
Adams	Ads	Hamilton	Hmn	Noble	Ne
Allen	An	Hancock	Hk	Ottawa	Oa
Ashland	Ald	Hardin	Hdn	Paulding	Pg
Ashtabula	Asa	Harrison	Hn	Perry	Py
Athens	As	Henry	Hy	Pickaway	Pky
Auglaize	Ae	Highland	Hd	Pike	Pke
Belmont	Bt	Hocking	Hg	Portage	Pe
Brown	Bn	Holmes	Hs	Preble	Pre
Butler	Br	Huron	Hrn	Putnam	Pm
Carroll	Cl	Jackson	Jkn	Richland	Rd
Champaign	Cpn	Jefferson	Jfn	Ross	Rs
Clark	Ck	Knox	Kx	Sandusky	Sy
Clermont	Ct	Lake	Lke	Scioto	So
Clinton	Cln	Lawrence	Le	Seneca	Sa
Columbiana	Ca	Licking	Lg	Shelby	Shy
Coshocton	Cn	Logan	Lgn	Stark	Sk
Crawford	Cd	Lorain	Ln	Summit	St
Cuyahoga	Cya	Lucas	Ls	Trumbull	Tl
Darke	Dke	Madison	Mdn	Tuscarawas	Ts
Defiance	De	Mahoning	Mg	Union	Un
Delaware	Del	Marion	Mn	Van Wert	Vt
Erie	Ee	Medina	Ma	Vinton	Vn
Fairfield	Fd	Meigs	Ms	Warren	Wan
Fayette	Fe	Mercer	Mr	Washington	Wn
Franklin	Fn	Miami	Mi	Wayne	We
Fulton	Ftn	Monroe	Me	Williams	Ws
Gallia	Ga	Montgomery	My	Wood	Wd
Geauga	Gea	Morgan	Mon	Wyandot	Wt
Greene	Ge	Morrow	Mw		
Guernsey	Gy	Muskingum	Mum		

¹Fulton County reported no production or sales of mineral commodities in 1990.²As used for Division of Mines mine numbers.

1990 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL-MINE OPERATORS

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	1990 production (tons)	State mine number	Division of Reclamation permit number
Algem Coal Development Co., Inc. 110 E. Elm St. Granville, OH 43023 614-587-2330 Herbert T. Humphrey, owner	Jones Pit (531) Noble Pit (576) <i>Total mines: 2</i>	Coshocton Coshocton	2,156 93,670 <i>Total tons: 95,826</i>	Cn-A ¹ Cn-NE ¹	D-0831 D-0618
Anthony Mining Co., Inc. P.O. Box 1298 Steubenville, OH 43952 614-765-4185 Joseph J. Sperlazza, pres.	Pipo #51 (189) Maine 307 (190) <i>Total mines: 2</i>	Jefferson Jefferson	90,262 157,725 <i>Total tons: 247,987</i>	Jfn-788 Jfn-789	D-0327 D-0307
Avis Coal Co. P.O. Box 3373 Zanesville, OH 43702-3373 614-454-2583 James F. Graham, pres.	Avis Coal Co. (383) Avis Coal Co. (566) <i>Total mines: 2</i>	Athens Athens	88,219 42,040 <i>Total tons: 130,259</i>	As-A ¹ As-AC ¹	D-0557 D-0841
B. & D. Coal, Inc. P.O. Box 134 Hamden, OH 45634 614-384-3404 Jerald B. Eberts, pres.	B. & D. Coal #1 (298) B. & D. Coal #1 (563) B. & D. Coal #1 (564) <i>Total mines: 3</i>	Vinton Vinton Vinton	3,276 29,339 30,592 <i>Total tons: 63,207</i>	Vn-623 Vn-B ¹ Vn-BD ¹	D-0294 D-0836 D-0207
B & N Coal, Inc. P.O. Box 100 Dexter City, OH 45727 614-783-3575 Gilbert Baker, pres.	Guiler (231) Magazine (494) Shevlin (495) Shilling (493) Ullman (514) <i>Total mines: 5</i>	Noble Noble Noble Noble Noble, Washington	336,606 4,014 101,143 197,482 104,722 <i>Total tons: 743,967</i>	Ne-146 Ne-149 Ne-150 Ne-1008 Ne-151	D-0343 D-0785, D-0786 D-0787 D-0706 D-0807
Bannock Coal Co. 43249 Harrah St. P.O. Box 98 Lafferty, OH 43951 614-968-3582 Tony Gentile, pres.	Black Oak (391) Negus Strip (25) 7400 Pit (27) Simon (569) <i>Total mines: 4</i>	Belmont Belmont Belmont Belmont	18,725 7,168 61,714 3,108 <i>Total tons: 90,715</i>	Bt-948 Bt-992 Bt-1074 Bt-1189	D-0348, D-0762 D-0305 D-0340 D-0914
Beaver Creek Resources, Inc. 7219 Salem-Unity Rd. Salem, OH 44460 216-336-3534 Delyte DeYarmon, pres.	Beaver Creek Resources, Inc. (392)	Columbiana	8,116	Ca-855	IM-891
Belville Mining Co., Inc. P.O. Box 834 Ironton, OH 45638 614-643-2331 Thomas J. Belville, pres.	Ohio #1 (491)	Lawrence	295,237	Le-450	D-0746
Benedict, Inc. P.O. Box 315 McArthur, OH 45651 614-596-5226 W. E. Engle, pres.	Mitchell Hollow (357) Waldron Pit (419) Allied West (420) Austin Pit (423) <i>Total mines: 4</i>	Vinton Vinton Vinton Vinton	² ² ² ²	Vn-172 Vn-183 Vn-184 Vn-187	D-0445 D-0633 D-0609 D-0672
Blum Coal Co. Scio-Carrollton Rd. P.O. Box 232 Carrollton, OH 44615-0232 216-627-2670 Raymond Blum, owner	Pickens Job (71) Wilson Job (527) DeAngelo-Summitville Job (321) Jackson-Strabula Job (470) Minick Job (471) <i>Total mines: 5</i>	Carroll Carroll Columbiana Columbiana Columbiana	1,155 5,190 14,423 10,547 13,387 <i>Total tons: 44,702</i>	Cl-231 Cl-245 Ca-938 Ca-944 Ca-950	D-0530 D-0848 IM-937 IM-951 D-0768
Boich Mining Co. P.O. Box 148 Bloomingdale, OH 43910 614-733-7311 Abe Bryan, pres.	Boich Mining Co. (178)	Jefferson	350,196	Jfn-528	D-0247, D-0563, D-0665, D-0803, D-0873
David Boyle, Inc. 2020 Airport Rd. New Lexington, OH 43764 614-342-2059 David R. Boyle, pres.	No. 1 Strip (330)	Hocking	6,961	Hg-321	D-0531
Buckeye-Industrial Mining Co. P.O. Box 389 Lisbon, OH 44432 216-337-9511 John C. Grisham, pres.	Gamber (446) Myers (447) Greer (466) R & T (467) Mountain Spring/Sheridan Mine (435) (u) ³	Carroll Carroll Carroll Carroll Columbiana	47,521 464,268 19,548 52,858 136,276	Cl-235 Cl-238 Cl-242 Cl-243 Ca-963	D-0693 D-0703 D-0751 D-0805 D-0532

¹No mine number has been assigned by the Division of Mines.²No report was filed in 1990.³(u) indicates underground mine.

1990 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL-MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	1990 production (tons)	State mine number	Division of Reclamation permit number
Buckeye-Industrial Mining Co. (con't)	Mountain Spring Coal Co. #13 (529) (u) ⁴	Columbiana	77,003	Ca-964	D-0874
	Sheridan/West Point Mine #7 (574) (u) ⁴	Columbiana	50,565	Ca-977 ⁵	D-0851
	Mountain Spring Coal Co. #6 (529) (u) ⁴	Columbiana	343,306	Ca-978 ⁵	D-0874
	Springer (449)	Columbiana	29,813	Ca-S ⁶	D-0700
	Roberts (366)	Stark	1,643	Sk-236	D-0632
	Dobransky (407)	Stark	51,430	Sk-237	D-0653
	<i>Total mines: 11</i>	<i>Total tons:</i>	<i>1,274,231</i>		
Buckingham Mining & Reclamation, Inc. P.O. Box 435 Corning, OH 43730 614-347-4721 Gary L. Allen, pres.	Drakes (497)	Perry	134,356	Py-340	D-0783
	Buckingham Mining & Reclamation, Inc. (591)	Perry	69,789	Py-342	D-0863
	<i>Total mines: 2</i>	<i>Total tons:</i>	<i>204,145</i>		
C L A Coal Co. Route 1 Box 304 Dennison, OH 44621 614-922-3942 Cynthia L. Aubiel, pres.	Dunglen (543)	Jefferson	98,604	Jfn-816	D-0825
Center Mining Co. 6950 State Rte. 164 Lisbon, OH 44432 216-424-3938 Robert Ullom & Richard Morlan, partners	C. Ullom (431)	Columbiana	2,744	Ca-961	D-0697
Central Ohio Coal Co. P.O. Box 98 Cumberland, OH 43732 614-962-2013 J. E. Katlic, exec. v. pres.	Muskingum Mine (228)	Morgan, Muskingum, Noble	3,384,969	Ne-41	D-0056, D-0127, D-0215, D-0261, D-0455, D-0559, D-0678, D-0820, D-0839, IM-921
Commercial Minerals, Inc. 10900 South Ave. P.O. Box 217 North Lima, OH 44452-0217 216-549-2165 W. T. Mackall, pres.	West Point (98) Lisbon (472)	Columbiana Columbiana	135,264 88,880	Ca-919 Ca-951	D-0048, D-0412 D-0741
	<i>Total mines: 2</i>	<i>Total tons:</i>	<i>224,144</i>		
Consolidation Coal Co. Eastern Region Cadiz, OH 43907 614-458-1381 Ben Statler, v. pres.	Mahoning Valley 36 (150)	Harrison	1,078,765	Hn-700	D-0018, D-0030, D-0051, D-0054, D-0334, D-0414, D-0452, D-0784, D-0826
Cravat Coal Co. 40580 Cadiz-Piedmont Rd. Cadiz, OH 43907 614-942-4656 Anthony Puskarich, pres.	Kriechbaum Pit (4) 2400 #1 (525) Sandy Ridge Pit (47) Hendrysburg (52) Barnesville Pit (309) Kendall (589)	Belmont Belmont Belmont Belmont Belmont Noble	17,047 111,909 3,310 24,143 7,267 15,620	Bt-78 Bt-146 Bt-1118 Bt-1131 Bt-1143 Ne-153	IM-733 D-0267 D-0396 D-0507 D-0573 D-0819
	<i>Total mines: 6</i>	<i>Total tons:</i>	<i>179,296</i>		
Crooksville Coal Co., Inc. P.O. Box 149 Crooksville, OH 43731 614-982-6651 Ralph L. Allen, pres.	Crooksville Strip (583) Crooksville Strip (239)	Hocking Perry	1,791 172,744	Hg-C ^{6a} Py-317	D-0864 D-0057, D-0085, D-0189, D-0461
	Crooksville Coal Co., Inc. (552)	Perry	^{6b}	Py-335	D-0615
	<i>Total mines: 3</i>	<i>Total tons:</i>	<i>174,535</i>		
D. & D. Mining Co. 3379 E. Garfield Rd. New Springfield, OH 44443 216-549-3127 Donald Thompson, pres.	Saviers Mine (441)	Columbiana	80,407	Ca-348	IM-976
D & L Contractors, Inc. P.O. Box 446 Flushing, OH 43977 614-968-4913 Walter Dombroski, pres.	D & L Strip (185) Piney Fork (586)	Jefferson Jefferson	78,967 5,126	Jfn-780 Jfn-820	D-0126 D-0894
	<i>Total mines: 2</i>	<i>Total tons:</i>	<i>84,093</i>		

⁴(u) indicates underground mine.⁵Production includes both surface and underground tonnage.^{6a}No mine number has been assigned by the Division of Mines.^{6b}Production for Py-335 included with Py-317.

1990 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL-MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	1990 production (tons)	State mine number	Division of Reclamation permit number
Daron Coal Co., Inc. Rte. 1 Box 167 Dennison, OH 44621 614-922-6829 Ronald Selway, pres.	Pleasant Valley Mine (433)	Tuscarawas	249,641	Ts-1991	D-0702
Davis Coal Co. Rte. 2 Box 6 Vinton, OH 45686 614-388-8620 Kenneth A. & Brinda F. Davis, owners	Newt Mine #1 (585) (u) ⁷	Jackson	200	Jkn-580	D-0622
Dennis Clay Co. 11123 State Rte. 37 East New Lexington, OH 43764 614-342-5473 Tom L. Dennis, owner	Wahl (590)	Perry	806	Py-338	IM-1092
ENZ, Inc. Rte. 5 Box 444 Dover, OH 44622 216-364-8621 Michael J. Nugo, pres.	Sickafoose Pit (246)	Stark	60,284	Sk-208	D-0295, D-0827
East Fairfield Coal Co. 10900 South Ave. P.O. Box 217 North Lima, OH 44452-0217 216-549-2165 R. E. Mackall, pres.	"M" Mine (475) "HP" Mine (211) <i>Total mines: 2</i>	Columbiana Mahoning <i>Total tons:</i>	46,746 174,884 221,630	Ca-968 Mg-626	D-0760 D-0468
East Ohio Limestone Co. P.O. Box 699 Hartsville, OH 44632 216-877-2636 Donald D. Phillips, partner	East Ohio Limestone Co. (255)	Stark	21,237	Sk-663	IM-5
Eberhart Coal, Inc. Rte. 2 Box 32 Dover, OH 44622-9507 216-343-5677 Phillip H. Eberhart, pres.	Eberhart #2 Hott Strip (270) Eberhart #2 Hott Strip (403) <i>Total mines: 2</i>	Tuscarawas Tuscarawas <i>Total tons:</i>	11,950 13,426 25,376	Ts-1919 Ts-1992	D-0075 D-0685
R. A. Eberts Co., Inc. P.O. Box 191 Jackson, OH 45640 614-682-3506 Phil A. Bowman, pres.	McArthur Pit (294) Green Pit (418) Stewart (422) <i>Total mines: 3</i>	Vinton Vinton Vinton <i>Total tons:</i>	185,278 218,830 42,656 446,764	Vn-163 Vn-182 Vn-186	D-0210 D-0631 D-0638
Elk Coal, Inc. P.O. Box 165 McArthur, OH 45651 614-596-2132 John L. Cline, pres.	Oak Hill (584) Bowling Strip (540) <i>Total mines: 2</i>	Jackson Jackson <i>Total tons:</i>	998 55,096 56,094	Jkn-1065 Jkn-E ⁸	D-0887 D-0695
Empire Coal Co. P.O. Box 729 Gnadenhutten, OH 44629 614-254-4395 John C. Wilson, pres.	Anco Mining, Inc. (534) Empire Coal Co. (256) Dichler-Riggle (292) Valley Mining, Inc. (596) <i>Total mines: 4</i>	Guernsey Tuscarawas Tuscarawas Tuscarawas <i>Total tons:</i>	50,762 259,188 13,817 58,167 381,934	Gy-310 Ts-115 Ts-1964 Ts-2015	D-0842 D-0190, D-0217, D-0398, D-0715 D-0516 D-0866
F. & M. Coal Co. Costonia Rd. Box 171 Toronto, OH 43964 614-544-5203 Edward Fiala, owner	F. & M. Strip (186)	Jefferson	20,842	Jfn-784	D-0728
Fairpoint Coal Co. P.O. Box 158 Fairpoint, OH 43927 614-695-3174 Dennis Zaccagnini, pres.	Mel-Worth (19) Pave Run (571) 7 Mile Drive (594) <i>Total mines: 3</i>	Belmont Belmont Tuscarawas <i>Total tons:</i>	843 1,407 25,614 27,864	Bt-927 Bt-F ⁸ Ts-2012	D-0483 D-0847 D-0869
John Glenn Mining 6556 State Rte. 45 Lisbon, OH 44432 216-424-5945 John Glenn, pres.	Dawson (473)	Columbiana	4,413	Ca-952	D-0764

⁷(u) indicates underground mine.⁸No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL-MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	1990 production (tons)	State mine number	Division of Reclamation permit number
Harrison Mining Corp. P.O. Box 176 Cadiz, OH 43907 614-942-8220 John A. McNab, pres.	Cadiz Portal (580) (u) ⁹	Harrison	43,062	Hn-710	D-0426
Hillcrest Coal, Ltd. 190 S. Main St. Magnolia, OH 44643 216-866-9388 Kermit & Richard James, Jr., partners	Hillcrest Coal, Ltd. (244) Hillcrest Coal, Ltd. (250) <i>Total mines: 2</i>	Stark Stark	¹⁰ 4,600 <i>Total tons: 4,600</i>	Sk-196 Sk-221	D-0381 D-0380
Hocking Valley Mining 36806 Maysville-Greendale Rd. Logan, OH 43138 614-385-6267 Kevin J. Boyle, pres.	Hocking Valley Mining #1 (483)	Hocking	31,789	Hg-324	D-0754
Holmes Limestone Co. P.O. Box 295 Berlin, OH 44610 216-893-2721 Merle Mullet, pres.	Clark (565) 241 Plant (161) Wayne Mines (162) Charm (164) Farmerstown (485) 557 (538) Bolivar Mine (363) Bolivar (592) Bolivar (593) Dennison (597) Stone Creek (601) <i>Total mines: 11</i>	Coshocton Holmes Holmes, Wayne Holmes Holmes Holmes Stark Stark Stark Tuscarawas Tuscarawas	84,117 19,594 68,045 130,902 68,545 152,914 4,553 17,785 9,103 142,907 4,551 <i>Total tons: 703,016</i>	Cn-832 Hs-67 Hs-79 Hs-86 Hs-92 Hs-97 Sk-235 Sk-H ¹¹ Sk-HL ¹¹ Ts-2017 Ts-2023	D-0589, D-0688, D-0856 IM-768 IM-656, D-0429 D-0193, D-0508 D-0624 D-0775 IM-945 D-0650 D-0865 D-0660 D-0796
Horizon Coal Corp. 11415 Erie Ave. SW P.O. Box 618 Beach City, OH 44608 216-756-2414 Merle Mullet, pres.	Whitacre-Greer (468) Johnson I (501) Johnson II (561) <i>Total mines: 3</i>	Carroll Tuscarawas Tuscarawas	113,350 10,459 17,732 <i>Total tons: 141,541</i>	Cl-H ¹¹ Ts-1995 Ts-J ¹¹	D-0791 D-0718 D-0837
Huberta Coal Co. P.O. Box 728 Steubenville, OH 43952 614-282-5301 Teresa C. Schiappa, pres.	Rose Valley (326)	Harrison	50,467	Hn-222	D-0587
J D Mining, Inc. Rte. 4 Box 4113 New Philadelphia, OH 44663 216-339-4900 John R. Demuth, pres.	Baltzley Valley Mine (505) Craig Pit (562) <i>Total mines: 2</i>	Tuscarawas Tuscarawas	10,045 77,651 <i>Total tons: 87,696</i>	Ts-2000 Ts-JD ¹¹	D-0744 D-0858
James Bros. Coal Co. 190 S. Main St. P.O. Box 425 Magnolia, OH 44643 216-866-9388 Kermit & Richard James, Jr., partners	James Bros. Coal Co. (59) James Bros. Coal Co. (61) <i>Total mines: 2</i>	Carroll Carroll	14,590 91,824 <i>Total tons: 106,414</i>	Cl-17 Cl-162	D-0282 D-0408
Joyce Coal Co., Inc. P.O. Box 264 St. Clairsville, OH 43950 614-782-1330 Mario Posock, pres.	Haas (524)	Belmont	78,290	Bt-1184	D-0799
K.C.C.I. P.O. Box 24 Morristown, OH 43759 614-782-1087 George Krulock, pres.	Susie Tipple (519)	Belmont	17,437	Bt-1179	D-0840
Kelly Coal Co. P.O. Box 89 Elkton, OH 44415 216-424-9654 Glenn O. Kelly, pres.	Burt Pit (528)	Columbiana	11,997	Ca-972	D-0821

⁹(u) indicates underground mine.¹⁰Production for Sk-196 included with Sk-221.¹¹No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL-MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	1990 production (tons)	State mine number	Division of Reclamation permit number
Kimble Clay & Limestone Co. Rte. 1 Box 386 Dover, OH 44622 216-343-1226 Floyd E. Kimble, owner	Kimble Clay & Limestone Co. (262) Kimble Clay & Limestone Co. (598) Kimble Clay & Limestone Co. (600) Kimble Clay & Limestone Co. (415) Kimble Clay & Limestone Co. (416) Kimble Clay & Limestone Co. (509) <i>Total mines: 6</i>	Tuscarawas Tuscarawas Tuscarawas Tuscarawas Tuscarawas Tuscarawas <i>Total tons:</i>	21,639 31,539 4,268 52,767 85,736 29,511 225,460	Ts-1727 Ts-2019 Ts-2022 Ts-K1 ¹² Ts-K2 ¹² Ts-K3 ¹²	IM-9 D-0852 D-0878 D-0203 D-0413 D-0729
King Quarries, Inc. P.O. Box 72 Caldwell, OH 43724 614-732-4185 David King, pres.	Nau (551)	Noble	37,822	Ne-152	D-0859
L & M Mineral Co. Star Rte. P.O. Box 54 Millersburg, OH 44654 216-893-2227 E. E. Mullet, pres.	Evans (264) Luikert (267) Spring (411) <i>Total mines: 3</i>	Tuscarawas Tuscarawas Tuscarawas <i>Total tons:</i>	12,124 76,551 202 88,877	Ts-1884 Ts-1914 Ts-1982	IM-6 D-0701 IM-621
LaMay Industries, Inc. P.O. Box 626 Jackson, OH 45640 614-682-7787 T. L. Darlington, Jr., pres.	LaMay-Gilmore (175)	Jackson	78,664	Jkn-1054	D-0205
Red Malcuit, Inc. 707 S. Wooster Ave. P.O. Box 166 Strasburg, OH 44680-0166 216-878-7114 Mark A. Malcuit, pres.	RMI #1 (269) RMI #2 (510) <i>Total mines: 2</i>	Tuscarawas Tuscarawas <i>Total tons:</i>	108,724 42,072 150,796	Ts-1918 Ts-2007	D-0236 D-0737
Marietta Coal Co. 67705 Friends Church Rd. St. Clairsville, OH 43950 614-695-2197 George Nicolozakes, pres.	Borovich-Neitzelt-Suter-Seaway (13) Vannest-Moore-Burghy (570) Barack-Henthorne et al. (38) Seabright-Bigley-Taylor-Long (39) Consol (42) Lude (53) North American-Thornton (450) Denham-Albaugh-Carey (452) Shaw (517) Porterfield-Harrison Leasing (523) Olexo (461) <i>Total mines: 11</i>	Belmont Belmont Belmont Belmont Belmont Belmont Belmont Belmont Belmont Belmont Belmont <i>Total tons:</i>	17,581 443 140,633 44,407 180,570 12,482 21,596 56,006 21,072 95,184 16,667 606,631	Bt-147 Bt-771 Bt-1104 Bt-1105 Bt-1109 Bt-1132 Bt-1162 Bt-1164 Bt-1177 Bt-1183 Bt-MAR ¹²	D-0022 D-0771 D-0088 D-0333 D-0270 D-0515 D-0720 D-0742 D-0776 D-0845 D-0570
McArthur Lumber & Post Co., Inc. State Rte. 93 North Box 76 McArthur, OH 45651 614-596-2551 Larry D. Murdock, v. pres.	McArthur Lumber & Post Co., Inc. (512)	Vinton	5,671	Vn-189	D-0766
Miller Mining, Inc. Rte. 2 Box 254 Sugarcreek, OH 44681 216-852-4511 Olen Miller, pres.	Garber Pit (479) Trail Pit (426) Schindler-Fondriest (499) Shrock-Troyer (506) Troyer-Gordon (557) Bose (558) Mast-Miller et al. (559) Newton (599) <i>Total mines: 8</i>	Coshocton Holmes Tuscarawas Tuscarawas Tuscarawas Tuscarawas Tuscarawas Tuscarawas <i>Total tons:</i>	34,024 53,151 82,452 75,949 31,130 12,996 87,978 19,192 396,872	Cn-826 Hs-94 Ts-197 Ts-2002 Ts-2008 Ts-2009 Ts-2010 Ts-2020	D-0770 D-0699 D-0802 D-0779 D-0833 D-0811 D-0849 D-0895
Myers Mining P.O. Box 218 Carrollton, OH 44615 216-739-2009 James L. Myers, owner	Harlem Pit (465)	Carroll	38,577	Cl-241	D-0782
Carl Noble & Son, Inc. P.O. Box 25 Harlem Springs, OH 44631 216-739-3311 Larry Noble, pres.	Noble Strip (427)	Carroll	1,796	Cl-237	D-0710
Ohio Coal & Construction Corp. P.O. Box 2388 Wintersville, OH 43952 614-264-7704 Richard Delatore, pres.	No. 38 Strip-Bianco (370) No. 38 Strip-Riddle (459) No. 9 Strip-Reilly (567) No. 36 Strip-Kackley (542) <i>Total mines: 4</i>	Belmont Belmont Belmont Jefferson <i>Total tons:</i>	3,472 49,987 17,368 38,522 109,349	Bt-1149 Bt-1173 Bt-1186 Jfn-814	D-0411 D-0675 D-0877 D-0180

¹²No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL-MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	1990 production (tons)	State mine number	Division of Reclamation permit number
Ohio Edison Co. 76 S. Main St. Akron, OH 44308 216-384-5298 Justin T. Rogers, Jr., pres.	Ohio Edison Co. Strip Mine (193)	Jefferson	128,911	Jfn-1267	D-0167
Ohio River Collieries, Inc. P.O. Box 128 Bannock, OH 43972 614-968-3504 Tony Gentile, pres.	Saffell (36)	Belmont	37,208	Bt-1102	D-0340
Ohio Valley Coal Co. 56854 Pleasant Ridge Rd. Alledonia, OH 43902 216-765-1240 Robert E. Murray, pres.	Powhatan #6 (3) (u) ¹³	Belmont	2,861,923	Bt-68	D-0360
Oxford Mining Co. 2313 Cambridge Rd. P.O. Box 427 Coshocton, OH 43812 614-623-0015 Charles C. Ungurean, pres.	Tri Mac (575) Humphrey (579) Waters (588) <i>Total mines: 3</i>	Coshocton Coshocton Muskingum	184,133 4,646 20,980 <i>Total tons: 209,759</i>	Cn-831 Cn-238 Mum-901	D-0870 D-0526 D-0898
Peabody Coal Co. 1951 Barrett Ct. P.O. Box 1990 Henderson, KY 42420 502-827-0800 G. S. Shiflett, pres.	Simco Mine (112) Sunnyhill #9 South (235) (u) ¹³ <i>Total mines: 2</i>	Coshocton Perry	704,637 997,791 <i>Total tons: 1,702,428</i>	Cn-799 Py-265	D-0023, D-0668 D-0324
Quality Coal Co. 8751 N. State Rte. 7 Cheshire, OH 45620 614-992-6637 Jay Hall, Jr., pres.	Buckeye Furnace (379) Rte. 50 Pit (511) 3300 Pit (602) <i>Total mines: 3</i>	Jackson Vinton Vinton	149,932 163,419 340,595 <i>Total tons: 653,946</i>	Jkn-1061 Vn-188 Vn-191	D-0627 D-0761 D-0867
Quarto Mining Co. Subsidiary of Consolidation Coal Co. 1029 Market St. P.O. Box 231 Clarington, OH 43915 614-458-1381 Ben Statler, v. pres.	Powhatan #4 (215) (u) ¹³	Monroe	2,540,848	Me-4	D-0433
R. & E. Coal Co. 8693 Bender St. Navarre, OH 44662 216-879-5864 Rafael F. Colucy, pres.	R. & E. Coal Co. (556)	Tuscarawas	3,083	Ts-2006	D-0800
R & F Coal Co. 538 North Main St. P.O. Box 247 Cadiz, OH 43907 614-942-2186 Jack Cox, pres.	Meigs-Phillips (456) Miller (460) American Legion (522) Dudek-Bannock (568) NCR 10 (572) Wentz-Green (122) Downing 36 (477) Hathaway-Isleta (442) Wolf-Isleta (577) Lamborn (147) Reppart (327) Tasa (399) Duncanwood (443) Lamborn South (482) Harrah West (581) Matusek-Heil (155) Myers North (537) Varkony-Polen (183) Arrowhead (544) Polen II (545) DeLong-Wilsterman (508) <i>Total mines: 21</i>	Belmont Belmont Belmont Belmont Belmont Coshocton Coshocton Coshocton Coshocton Harrison Harrison Harrison, Jefferson Harrison Harrison Harrison Harrison Jefferson Jefferson Jefferson Tuscarawas	63,005 286,404 106,471 6,770 275,352 17,227 196,768 497,745 270,861 31,627 36,728 140,819 311,613 32,232 169,524 34,102 5,020 313,961 187,662 94,795 14,495 <i>Total tons: 3,093,181</i>	Bt-1168 Bt-1175 Bt-1182 Bt-1188 Bt-RF ¹⁴ Cn-814 Cn-824 Cn-HI ¹⁴ Cn-RF ¹⁴ Hn-218 Hn-223 Hn-225 Hn-227 Hn-236 Hn-748 Hn-M ¹⁴ Hn-MN ¹⁴ Jfn-720 Jfn-817 Jfn-P2 ¹⁴ Ts-DW ¹⁴	D-0619 D-0338 D-0854 D-0908 D-0862 D-0489 D-0679 D-0673 D-0689 D-0436 D-0552 D-0593 D-0681 D-0436 D-0797 D-0470 D-0772 D-0158 D-0860 D-0798 D-0792
R & R Minerals, Inc. 7360 Skyview Rd. Millersburg, OH 44654 216-674-4926 Gary R. Ross, pres.	Orange Pit (444) Adams (578) <i>Total mines: 2</i>	Coshocton Coshocton	4,331 23,032 <i>Total tons: 27,363</i>	Cn-822 Cn-RR ¹⁴	D-0708 D-0872

¹³(u) indicates underground mine.¹⁴No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL-MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	1990 production (tons)	State mine number	Division of Reclamation permit number
R & S Coal Co., Inc. Rte. 1 Box 229 Hamden, OH 45634 614-384-5282 Roger Eberts, owner	R & S Strip (295)	Vinton	8,179	Vn-173	D-0719
R. T. G., Inc. P.O. Box 250 Byesville, OH 43723 614-439-4399 James E. Rossiter, pres.	R. T. G. #5 (323)	Guernsey	105,378	Gy-305	D-0578
Regal Mining, Inc. 3333 Perron Rd. SE Carrollton, OH 44615 216-739-6596 Charles L. Smith, pres.	Huggins (462) Camp Ecco (360) Buckeye (463) Selway (526) Copeland (573) <i>Total mines: 5</i>	Carroll Carroll Carroll Carroll Carroll	2,779 44,793 1,550 114,750 1,008 <i>Total tons: 164,880</i>	Cl-228 Cl-233 Cl-239 Cl-244 Cl-R ¹⁵	D-0566 D-0628 D-0749 D-0814 D-0902
Saginaw Mining Co. 1100 Superior Ave. P.O. Box 6508 Cleveland, OH 44114-2598 216-861-3300 R. D. Thompson, pres.	Saginaw Mine (16) (u) ¹⁶	Belmont	474,492	Bt-643	D-0328
Sands Hill Coal Co., Inc. 1203 N. Pennsylvania Ave. Wellston, OH 45692 614-384-5659 Jack Huffman, pres.	Sands Hill Strip #4 (541) Sands Hill Strip #1 (299) Sands Hill Strip #3 (513) <i>Total mines: 3</i>	Jackson, Vinton Vinton Vinton	351,107 3,700 164,356 <i>Total tons: 519,163</i>	Jkn-SH ¹⁵ Vn-641 Vn-S ¹⁵	D-0861, IM-1069 D-0309 D-0793
Sands Mining Corp. 3445 Adamsville Rd. P.O. Box 2848 Zanesville, OH 43701 614-454-1483 Gene Sands, pres.	Mont Pit (587)	Muskingum	68,028	Mum-900	D-0882
Schiappa Coal Co., Inc. P.O. Box 728 Steubenville, OH 43952 614-282-5301 Teresa C. Schiappa, pres.	Smith 487 (195)	Jefferson	23,845	Jfn-795	D-0487
Southern Ohio Coal Co. P.O. Box 490 Athens, OH 45701 614-286-5051 J. E. Katlic, exec. v. pres.	Meigs Mine #31 (212, 300) (u) ¹⁶ Meigs Mine #2 (213) (u) ¹⁶ <i>Total mines: 2</i>	Meigs, Vinton Meigs	2,146,186 3,262,346 <i>Total tons: 5,408,532</i>	Ms-293 Ms-294	D-0354, D-0463 D-0355
Stewart Coal Co. Lake Alma Rd. Wellston, OH 45692 614-286-4696 William F. Stewart, pres.	White Pit (539)	Jackson	68,044	Jkn-1064	D-0732
Sunnydale Mining Co. 88740 Fairview Rd. Jewett, OH 43986 614-946-4291 Robert Stewart, owner	Snyder Pit (536)	Harrison	2,041	Hn-747	D-0835
Thompson Bros. Mining Co. 3379 E. Garfield Rd. New Springfield, OH 44443 216-549-3979 J. E. Thompson, pres.	Peres Mine (205)	Mahoning	16,276	Mg-65	D-0374
Thompson Mining Co. 12321 Ideal Rd. Byesville, OH 43723 614-685-6726 George Thompson, owner	Harkness Pit (547)	Muskingum	¹⁷	Gy-308	D-0724
Tri-State Coal Sales, Inc. P.O. Box 754 New Lexington, OH 43764 614-762-9535 Steven L. Allen, pres.	Tri-State Coal Sales, Inc. (484)	Hocking	18,586	Hg-325	D-0767

¹⁵No mine number has been assigned by the Division of Mines.¹⁶(u) indicates underground mine.¹⁷Sales only, no production.

1990 OHIO ALPHABETICAL DIRECTORY OF PRODUCING COAL-MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	1990 production (tons)	State mine number	Division of Reclamation permit number
Valley Coal Corp. P.O. Box 148 Union Furnace, OH 43158 304-773-5531 Velma G. Zuspan, pres.	Darmac (158) Oliver Pit (331) <i>Total mines: 2</i>	Hocking Hocking <i>Total tons:</i>	36,878 731 37,609	Hg-295 Hg-V ¹⁸	D-0304 D-0519, D-0832
Valley Mining, Inc. Rte. 1 Box 158B Dennison, OH 44621 614-922-3942 Mary J. Brown, pres.	Smith (582) York (489) Fouts (417) Page (504) Heddleston (555) Lattavo (560) Gibson (595) <i>Total mines: 7</i>	Harrison Jefferson Tuscarawas Tuscarawas Tuscarawas Tuscarawas Tuscarawas <i>Total tons:</i>	21,764 212,007 9,798 35,179 53,471 138,341 23,767 494,327	Hn-750 Jfn-813 Ts-1983 Ts-1999 Ts-2005 Ts-2011 Ts-2014	D-0901 D-0740 D-0690 D-0738 D-0769 D-0822 D-0868
Varkony Mining Co. P.O. Box 427 Hopedale, OH 43976 614-937-2777 Stephen & John Varkony, Jr., owners	Varkony Mining Co. (146)	Harrison	25,720	Hn-217	D-0440
W.B. Coal Co., Inc. R.D. 1 Box 40 Bloomingdale, OH 43910 614-282-6503 Wayne Boich, pres.	McGinness Bros. Strip (144)	Harrison	127,738	Hn-738	D-0376
Waterloo Coal Co., Inc. P.O. Box 626 Jackson, OH 45640 614-682-7787 Phil A. Bowman, v. pres.	Bowman Strip (165) Blackfork Pit (546) <i>Total mines: 2</i>	Jackson Lawrence <i>Total tons:</i>	672,395 20,788 693,183	Jkn-367 Le-451	IM-774, D-0205, D-0273, D-0286, D-0594 D-0726
Weirton Construction Co. 401 Pennsylvania Ave. Weirton, WV 26062 304-748-1400 Donald R. Donell, pres.	#19 (180)	Jefferson	166,204	Jfn-687	D-0404
Zimnox Coal Co. 1211 Third St. Brilliant, OH 43913 614-598-4111 Walter Zimnox, pres.	Zimnox #4 (181)	Jefferson	48,188	Jfn-703	D-0194, D-0736, D-0843
Zoar Mining Co. P.O. Box 550 Zoar, OH 44697 216-874-2434 David W. Johnson, pres.	Zoar Mining Co. (258)	Tuscarawas	1,489	Ts-540	IM-28

¹⁸No mine number has been assigned by the Division of Mines.

**1990 OHIO DIRECTORY OF COAL-PREPARATION PLANTS AND
ASSOCIATED FACILITIES, BY COUNTY**

County	Name, address, telephone number, and president/owner/manager of company	Name of plant (and map location number for coal-preparation plants)	Township	State mine number	Division of Reclamation permit number	Type of facility
Belmont	Bannock Coal Co. 43249 Harrah St. P.O. Box 98 Lafferty, OH 43951 614-968-3582 Tony Gentile, pres.	Bannock Coal Shops	Wheeling	Bt-1127	D-0774	tipple, shops
	Consolidation Coal Co. Eastern Region Cadiz, OH 43907 614-458-1381 Ben Statler, v. pres.	General Services 105	Wheeling	Hn-5		general services
	Cravat Coal Co. 40580 Cadiz-Piedmont Rd. Cadiz, OH 43907 614-942-4656 Anthony Puskarich, pres.	Bellaire River Dock Lynn Tipple (26)	Pultney Washington, York	Bt-876 Bt-878	D-0687 D-0230	loading dock tipple, prep plant—jig, flotation
		Holloway Tipple	Flushing	Bt-963	D-0763	tipple
	Marietta Coal Co. 67705 Friends Church Rd. St. Clairsville, OH 43950 614-695-2197 George Nicolozakes, pres.	Marietta Coal Co. (3)	Pultney	Bt-936	D-0216	loading dock, prep plant—jig, flota- tion, centrifugal dryer, crushers, screens
	Ohio River Collieries, Inc. P.O. Box 128 Bannock, OH 43972 614-968-3504 Tony Gentile, pres.	Amber Tipple Lafferty Tipple Lafferty Truck Shop	Union Union Union	Bt-844 Bt-947 Bt-1093	D-0773 D-0773 D-0773	tipple tipple shop
	Ohio Valley Coal Co. 56854 Pleasant Ridge Rd. Alledonia, OH 43902 216-765-1240 Robert E. Murray, pres.	Powhatan #6 (4)	Smith, Washington	Bt-68	D-0360	prep plant—jigs, cyclones, centri- fuges, thickeners, filters, screens
	Quarto Mining Co. (subsidiary of Consolidation Coal Co.) 1029 Market St. P.O. Box 231 Clarington, OH 43915 614-458-1381 Ben Statler, v. pres.	Central Shop	York	Bt-1000		central shop
	R & F Coal Co. 538 North Main St. P.O. Box 247 Cadiz, OH 43907 614-942-2186 Jack Cox, pres.	Lamira Preparation Plant (1)	Smith	Bt-108		prep plant—heavy-media washers, cyclone, centrifuges, thickeners, filters, crushers, breakers, screens
		Bellaire River Dock Rebuild Center	City of Bellaire	Bt-832 Bt-1110		dock shop
Carroll	Saginaw Mining Co. 1100 Superior Ave. P.O. Box 6508 Cleveland, OH 44114-2598 216-861-3300 R. D. Thompson, pres.	Saginaw Mine (2)	Richland	Bt-643	D-0328	prep plant—heavy-media washers, crushers, screens, picking tables, magnets
	Conotton Valley Quarries, Inc. P.O. Box 187 Sherrodsville, OH 44675 614-942-4656 Joseph Belden, pres.	Sherrodsville Tipple	Orange	Cl-C ¹	D-0707	tipple
Columbiana	Buckeye-Industrial Mining Co. P.O. Box 389 Lisbon, OH 44432 216-337-9511 John C. Grisham, pres.	Kensington Preparation Plant (5)	West	Ca-879	D-0806	prep plant—heavy-media washer, cyclone, centrifuges, breaker
	C & E Coal, Inc. Route 2 Box 177 Toronto, OH 43964 614-537-1498 Amos L. Rawson, pres.	C & E Coal, Inc. (6)	Madison	Ca-892	D-0599	prep plant—crushers, screens
	Johnson Mining Co. 39150 Churchill Rd. Lisbon, OH 44432 216-424-3742 Robert A. Johnson, owner	Tipple	Elkrun, Madison	Ca-922	D-0666	tipple

¹No mine number has been assigned by the Division of Mines.

**1990 OHIO DIRECTORY OF COAL-PREPARATION PLANTS AND
ASSOCIATED FACILITIES, BY COUNTY—Continued**

County	Name, address, telephone number, and president/owner/manager of company	Name of plant (and map location number for coal-preparation plants)	Township	State mine number	Division of Reclamation permit number	Type of facility
Coshocton	Conesville Coal Preparation Co. P.O. Box 222 Conesville, OH 43811 614-687-3209 J. E. Katlic, exec. v. pres.	Conesville Coal Preparation Co. (7)	Franklin	Cn-810		prep plant—jig, cyclones, froth cells, flotation, filter press, screens, dryers
	Oxford Mining Co. 2313 Cambridge Rd. P.O. Box 427 Coshocton, OH 43812 614-623-0015 Charles C. Ungurean, pres.	Coshocton Tipple	Franklin	Cn-736	D-0671	tipple
	R & F Coal Co. 538 North Main St. P.O. Box 247 Cadiz, OH 43907 614-942-2186 Jack Cox, pres.	Barb Tipple	Franklin	Cn-748	D-0661	tipple
Gallia	Conrich of Ohio, Inc. P.O. Box 59 Addison, OH 45610 614-446-7040 Lee Congleton, pres.	Conrich of Ohio, Inc.	Addison	Ga-216	D-0739	loading dock
	LaMay Industries, Inc. P.O. Box 626 Jackson, OH 45640 614-682-7787 Phil A. Bowman, v. pres.	Waterloo River Dock	Addison	Ga-229	D-0725	dock, tipple
	Mack Energy Co. P.O. Box 148 Union Furnace, OH 43158-0148 614-385-8521 Michael B. McCort, pres.	River Tipple	Clay	Ga-236		dock, tipple
	Sands Hill Coal Co., Inc. 1203 N. Pennsylvania Ave. Wellston, OH 45692 614-384-5659 Jack Huffman, pres.	Sands Hill Coal Co., Inc.	Addison	Ga-183	D-0834	tipple
Harrison	Consolidation Coal Co. Eastern Region Cadiz, OH 43907 614-458-1381 Ben Statler, v. pres.	Georgetown Preparation Plant (8)	Cadiz	Hn-212	D-0192	prep plant—jigs, flotation, cyclones, centrifuges, filters, crushers, breaker, screens, dryer, picking tables, magnets
	Cravat Coal Co. 40580 Cadiz-Piedmont Rd. Cadiz, OH 43907 614-942-4656 Anthony Puskarich, pres.	22 Shop	Moorefield	Hn-230		shop
	R & F Coal Co. 538 North Main St. P.O. Box 247 Cadiz, OH 43907 614-942-2186 Jack Cox, pres.	Nitrate Plant Machine Shop/Warehouse	Short Creek Cadiz	Hn-680 Hn-709		nitrate plant shop
Hocking	Mack Energy Co. P.O. Box 148 Union Furnace, OH 43158-0148 614-385-8521 Michael B. McCort, pres.	Tipple	Starr	Hg-M ²	D-0556	tipple
Jackson	Sands Hill Coal Co., Inc. 1203 N. Pennsylvania Ave. Wellston, OH 45692 614-384-5659 Jack Huffman, pres.	Sands Hill Prep Plant (9)	Milton	Jkn-1055	D-0347	prep plant—heavy-media cyclone, hydrocyclones, screens, dryer, crusher, picking table, magnets
	Stewart Coal Co. Lake Alma Rd. Wellston, OH 45692 614-286-4696 William F. Stewart, pres.	Stewart Tipple	Milton	Jkn-S ²	D-0659	tipple

²No mine number has been assigned by the Division of Mines.

**1990 OHIO DIRECTORY OF COAL-PREPARATION PLANT AND
ASSOCIATED FACILITIES, BY COUNTY—Continued**

County	Name, address, telephone number, and president/owner/manager of company	Name of plant (and map location number for coal-preparation plants)	Township	State mine number	Division of Reclamation permit number	Type of facility
Jackson (con't)	Waterloo Coal Co., Inc. P.O. Box 626 Jackson, OH 45640 614-682-7787 Phil A. Bowman, v. pres.	Bowman Strip (10)	Jefferson, Madison	Jkn-367	D-0285	prep plant—jig, crushers, breaker, screens, dryers, wash tables
Jefferson	Ohio Coal & Construction Corp. P.O. Box 2388 Wintersville, OH 43952 614-264-7704 Richard Delatore, pres.	#40 Dock-Shop-Washer (12)	Warren	Jfn-647	D-0492	dock, shop, prep plant—heavy-media washer, cyclones, crushers, breaker, screens, dryers
	W.B. Coal Co., Inc. R.D. 1 Box 40 Bloomingdale, OH 43910 614-282-6503 Wayne Boich, owner	W.B. Tipple	Wayne, Cross Creek	Jfn-744	D-0665	tipple
Lawrence	Collins Mining Co. Rte. 2 Box 48 Ironton, OH 45638 614-532-9414 O. C. Collins, owner	River Dock	Hamilton	Le-415	D-0777	dock
	Harbour Marine, Inc. P.O. Box 3126 Huntington, WV 25702-0126 703-935-7521 James Williamson, v. pres.	Harbour Marine, Inc.	Union	Le-420	D-0662	tipple
	Ironton Coal Co., Inc. P.O. Box 2189 Ashland, KY 41105-2189 606-928-3433 Larry Addington, pres.	Ironton Coal Co., Inc.	Upper	Le-439		loading dock
	Rail-River Terminal Co., Inc. c/o Marcoal USA P.O. Box 562 Dale, IN 47523 812-937-4536 James D. Kulbeth, pres.	Rail-River Terminal Co., Inc.	Perry	Le-413	D-0664	dock
Mahoning	East Fairfield Coal Co. 10900 South Ave. P.O. Box 217 North Lima, OH 44452-0217 216-549-2165 R. E. Mackall, pres.	Tipple Washing & Crushing Plant (13)	Beaver Beaver	Mg-621 Mg-623	D-0214	tipple prep plant—cyclones, centrifuges, thickener, filter, crushers, screens, magnets
	Ted Mesmer & Sons, Inc. 10950 Woodworth Rd. North Lima, OH 44452 216-549-2385 Robert Mesmer, v. pres.	Mesmer Tipple	Beaver	Mg-59	D-0686	tipple
	Thompson Bros. Mining Co. 3379 E. Garfield Rd. New Springfield, OH 44443 216-549-3979 J. E. Thompson, owner	Thompson Bros. Mining Co.	Springfield	Mg-588	D-0711	tipple
Meigs	Jaymar Coal Co. 8751 N. State Rte. 7 Cheshire, OH 45620 614-992-6637 Jay Hall, Jr., pres.	Jaymar Tipple	Salisbury	Ms-J ³	D-0698	tipple
	Raven Hocking Coal Corp. P.O. Box 108 Mason, WV 25260 304-773-5531 Velma G. Zuspan, pres.	Raven Dock	Sutton	Ms-307		dock
	Southern Ohio Coal Co. P.O. Box 490 Athens, OH 45701 614-286-5051 J. E. Katlic, exec. v. pres.	Meigs Mine No. 31 (14)	Salem	Ms-293	D-0354	prep plant—heavy-media washers, flotation, cyclones, centrifuges, thickeners, filters, breaker, screens

³No mine number has been assigned by the Division of Mines.

**1990 OHIO DIRECTORY OF COAL-PREPARATION PLANTS AND
ASSOCIATED FACILITIES, BY COUNTY—Continued**

County	Name, address, telephone number, and president/owner/manager of company	Name of plant (and map location number for coal-preparation plants)	Township	State mine number	Division of Reclamation permit number	Type of facility
Monroe	Quarto Mining Co. (subsidiary of Consolidation Coal Co.) 1029 Market St. P.O. Box 231 Clarington, OH 43915 614-458-1381 Ben Statler, v. pres.	Powhatan #4 (15)	Salem	Me-4	D-0422	prep plant—jigs, cyclones, centrifuges, thickeners, filters, crushers
Morgan	Central Ohio Coal Co. P.O. Box 98 Cumberland, OH 43732 614-962-2013 J. E. Katlic, exec. v. pres.	Muskingum Mine (16)	Meigsville	Ne-41	D-0420	prep plant—jigs, flotation, cyclones, thickener, filters, crushers, breakers, screens, magnets
Muskingum	King Quarries, Inc. P.O. Box 72 Caldwell, OH 43724 614-732-4185 David King, pres.	King Quarries Tipple	Washington	Mum-229	D-0363	tipple
	Sands Mining Corp. 3445 Adamsville Rd. P.O. Box 2848 Zanesville, OH 43701 614-454-1483 Gene Sands, pres.	Sands Mining Coal-Preparation Plant (28)	Washington	Mum-239	D-0428	prep plant—jig, cyclones, crusher, flotation, conveyor
Perry	Crooksville Coal Co., Inc. P.O. Box 149 Crooksville, OH 43731 614-982-6651 Ralph L. Allen, pres.	Crooksville Preparation Plant (18) Crooksville Tipple	Bearfield Salt Creek	Py-317 Py-339	D-0248 D-0692	prep plant—jig, flotation, centrifugal dryer, crushers, screens tipple
	Nutter Bros. Coal Co., Inc. P.O. Box 248 New Straitsville, OH 43766 614-394-2681 James P. Nutter, pres.	#1 Tipple	Monday Creek	Hg-293	D-0288	tipple
	Peabody Coal Co. 2644 Pike Twp. Rd. 217 NE New Lexington, OH 43764 502-827-0800 G. S. Shiflett, pres.	Sunnyhill Preparation Plant #0297 (17)	Pike	Py-248	D-0325	prep plant—jigs, cyclones, crushers, breaker, screens, centrifuges
Scioto	Ky-Oh Transportation Co. P.O. Box 899 South Shore, KY 41175 606-932-3101 C. N. Gilmore, pres.	Ky-Oh Transportation Co.	Porter	So-96		dock
	Standard Materials, Inc. P.O. Box 184 Wheelersburg, OH 45694 216-743-3151 C. W. Kelley, asst. sec.	Wheelersburg Dock	Porter	So-92	D-0607	dock
Stark	Wilmot Mining Co. P.O. Box 185 Wilmot, OH 44689 216-359-5411 Thomas R. Eddy, pres.	Wilmot Mining Tipple	Bethlehem	Sk-W ⁴	D-0595	tipple
Tuscarawas	Central Fuel Co. County Rd. 55 P.O. Box 165 New Philadelphia, OH 44663 216-339-5049 Keith B. Kimble, gen. mgr.	Central Fuel Co. (20)	York	Ts-1938	D-0381	prep plant—jig, screen, dryers
	Empire Coal Co. P.O. Box 729 Gnadenhutzen, OH 44629 614-254-4395 John C. Wilson, pres.	Empire Coal Co. (19)	Clay, Salem	Ts-115	D-0199	prep plant—jig, flotation, cyclones, filters, crushers, screens

⁴No mine number has been assigned by the Division of Mines.

**1989 OHIO DIRECTORY OF COAL-PREPARATION PLANTS AND
ASSOCIATED FACILITIES, BY COUNTY—Continued**

County	Name, address, telephone number, and president/owner/manager of company	Name of plant (and map location number for coal-preparation plants)	Township	State mine number	Division of Reclamation permit number	Type of facility
Tuscarawas (con't)	Horizon Coal Corp. 11415 Erie Ave. SW P.O. Box 618 Beach City, OH 44608 216-756-2414 Merle Mullet, pres.	Horizon Coal Wash Plant (21)	Franklin, Lawrence	Ts-1942	D-0287	prep plant—jigs, cyclones, centri- fuges, crushers, screens, picking tables
	Miller Mining, Inc. Rte. 2 Box 254 Sugarcreek, OH 44681 216-852-4511 Olen Miller, pres.	Copperhead Tipple	Sugar Creek, Wayne	Ts-MM ⁵	D-0652	tipple
Vinton	Benedict, Inc. P.O. Box 315 McArthur, OH 45651 614-596-5226 W. E. Engle, pres.	Benedict, Inc. (22)	Swan	Vn-145	D-0159	prep plant—heavy-media washer, cyclone, crusher, conveyors
	R. A. Eberts Co., Inc. P.O. Box 191 Jackson, OH 45640 614-682-3506 Phil A. Bowman, pres.	Eberts Tipple	Elk	Vn-E ⁵	D-0472	tipple
	Jaymar Coal Co. 8751 N. State Rte. 7 Cheshire, OH 45620 614-992-6637 Jay Hall, Jr., pres.	Jaymar Prep Plant (23)	Clinton	Vn-178	D-0185	prep plant—washers, cyclones, jig, centrifugal dryer, thickener, Diester table, screens, filter, crusher, magnet
	Sands Hill Coal Co., Inc. 1203 N. Pennsylvania Ave. Wellston, OH 45692 614-384-5659 Jack Huffman, pres.	Sands Hill Strip (24)	Clinton	Vn-641	D-0169	prep plant—heavy-media washers, flotation, cyclones, centrifuge, crushers, screens, dryer, picking tables, magnets
Wayne	Holmes Limestone Co. P.O. Box 295 Berlin, OH 44610 216-893-2721 Merle Mullet, pres.	Holmes Limestone Prep- aration Plant (27)	Franklin	Hs-79	D-0283	prep plant—jig, crushers, dryers, screens, conveyors

⁵No mine number has been assigned by the Division of Mines.

1990 OHIO DIRECTORY OF PRODUCING COAL-MINE OPERATORS, BY COUNTY

NOTE: This directory lists only the coal-producing operations. It does not list tipples, loading docks, preparation plants, or other active, nonproducing operations that would contribute to employment and wage statistics presented on p. 22-25.

SEAM IDENTIFICATION

1 Sharon	5 Lower Kittanning	7A Mahoning	12 Washington
3 Lower Mercer	5A Strasburg	8 Pittsburgh	A Anderson
3A Upper Mercer	6 Middle Kittanning	8A Pomeroy-Redstone	H Harlem
4 Brookville	6A Lower Freeport	9 Meigs Creek	W Winters
4A Clarion	7 Upper Freeport	11 Waynesburg	

Name of company	Name of mine	Township	Seam	Thick- ness (inches)	Type of mine	Method of production	Tonnage produced in 1990	Days in production in 1990	Disposition		Employment		State mine number
									Method	Tonnage	Production		
											Under- ground	Sur- face	
ATHENS COUNTY — Total production = 130,259 tons													
Avis Coal Co.	Avis Coal Co.	York	6	60	surface	strip	88,219	194	truck	88,219	12	1	As-A ²
	Avis Coal Co.	York	6A	24	surface	strip	42,040	117	truck	42,040	11	1	As-AC ²
BELMONT COUNTY — Total production = 51,411 tons													
Bannock Coal Co.	Negus Strip	Colerain	12	48	surface	strip	7,168	64	truck	7,188	1	2	Bt-992
	Simon	Colerain	12	60	surface	strip	3,108	16	truck	3,108	1	1	Bt-1189
	7400 Pit	Union	9	42	surface	strip	59,871	165	truck	61,804	8	2	Bt-1074
			11	28	surface	auger	1,843						
						Total	61,714						
Cravat Coal Co.	Black Oak	Union, Wheeling	9	30	surface	strip	17,193	52	truck	18,725	3	2	Bt-948
						auger	1,532						
						Total	18,725						
	2400 #1	Flushing	8		surface	strip	111,909	166	water	111,909	17	1	Bt-146
Fairpoint Coal Co.	Sandy Ridge Pit	Goshen, Warren	11		surface	strip	3,310	47	water	3,310	1	1	Bt-1118
	Hendrysburg	Kirkwood	8		surface	strip	24,143	69	water	24,143	7	2	Bt-1131
	Barnesville Pit	Warren	7	36	surface	auger	7,267	12	truck	7,267	1	3	Bt-1143
	Kriechbaum Pit	York	8	36	surface	strip	17,047	170	water	17,047	6	2	Bt-78
Joyce Coal Co., Inc. K.C.C.I. Marietta Coal Co.	Mel-Worth	Richland	9	36	surface	strip	843	1	truck	843	1	2	Bt-927
	Pave Run	Richland	8	60	surface	strip	1,407	1	truck	1,407	4	3	Bt-F ²
	Haas	Richland	8	60	surface	strip	78,290	147	truck	78,290	8	8	Bt-1184
	Susie Tipple	Wheeling	8	60	surface	strip	17,437	26	truck	17,437	3	1	Bt-1179
	Seabright-Bigley-Taylor-Long	Colerain	11	28	surface	strip	30,063	55	truck	44,407	27	24	Bt-1105 ³
			12		surface	auger	14,344						
						Total	44,407						
Vannest-Moore-Burghy Barack-Henthorne et al.		Richland	11		surface	strip	433	2	truck	433			Bt-771
		Richland	11	36	surface	strip	104,170	135	truck	140,633			Bt-1104
						auger	36,463						
						Total	140,633						
Lude North American-Thornton		Richland	9	38	surface	strip	12,482	15	truck	12,482			Bt-1132
		Richland	11	36	surface	strip	13,255	30	truck	21,596			Bt-1162
			12		surface	auger	8,341						
						Total	21,596						

Porterfield-Harrison Leasing	Richland	11		surface	strip auger Total	70,957 24,227 95,184	111	truck	95,184	Bt-1183
Olexo	Richland	11	40	surface	strip auger Total	11,447 5,220 16,667	24	truck	16,667	Bt-MAR ²
Shaw	Smith	11	36	surface	strip auger Total	17,310 3,762 21,072	30	truck	21,072	Bt-1177
Borovich-Neitzelt-Suter-Seaway	Smith	11	40	surface	strip auger Total	8,298 9,283 17,581	15	truck	17,581	Bt-147
Denham-Albaugh-Carey	Smith	11	44	surface	strip auger Total	38,074 17,932 56,006	57	water truck Total	9,331 46,675 56,006	Bt-1164
Consol	Union	8	51	surface	strip auger Total	110,546 70,024 180,570	185	truck	180,570	Bt-1109
Ohio Coal & Construction Corp.	Pease	12	40	surface	strip	49,987	219	truck	49,987	Bt-1173
	No. 38 Strip-Riddle	9	48	surface	strip	3,472	54	truck	3,472	Bt-1149
Ohio Valley Coal Co.	No. 38 Strip-Bianco	9	36	surface	strip	17,368	137	truck	17,368	Bt-1186
	No. 9 Strip-Reilly	11	32	surface	strip	37,208	96	truck	37,208	Bt-1102
	Saffell	8	62	surface slope	longwall cont. miner Total	2,013,240 848,683 2,861,923	287	rail water truck Total	1,281,489 1,288,125 240,210 2,809,824	Bt-68
	Powhatan #6								224	
R & F Coal Co.	Meigs-Phillips	9	35	surface	strip	63,005	72	truck	63,005	Bt-1168
	American Legion	11	24	surface	strip	106,471	248	water truck Total	72,809 32,100 104,909	Bt-1182
Miller	Union	9	42	surface	strip auger Total	284,858 1,546 286,404	290	water truck Total	205,224 79,344 284,568	Bt-1175
NCR 10	Union, Wheeling	9	36	surface	strip	275,352	233	water truck Total	171,654 101,878 273,532	Bt-RF ²
Dudek-Bannock	Wheeling	9		surface	strip	6,770	24	water truck Total	4,149 2,712 6,861	Bt-1188
Saginaw Mining Co.	Richland	8	60	slope	cont. miner	474,492	243	rail	471,004	Bt-643
CARROLL COUNTY — Total production = 1,015,557 tons										
Blum Coal Co.	Pickens Job	7		surface	strip	1,155	58	truck	1,155	Cl-231
	Wilson Job	7A	34	surface	strip	5,190	95	truck	5,190	Cl-245
	Gamber	5,6	36	surface	strip auger Total	41,757 5,764 47,521	264	truck	47,521	Cl-235
R & T	Fox	7A	24	surface	strip auger Total	43,700 9,158 52,858	276	truck	52,858	Cl-243
Myers	Rose	5,6	55	surface	strip auger Total	426,634 37,634 464,268	276	truck	464,268	Cl-238
Greer	Rose	6	36	surface	strip auger Total	12,543 7,005 19,548	276	truck	19,548	Cl-242

¹Averages fewer than one employee per month.²No mine number has been assigned by the Division of Mines.³Employment reported for Bt-1105 is a summary of employment for all Marietta Coal Co. operations.

1990 OHIO DIRECTORY OF PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of company	Name of mine	Township	Seam	Thick- ness (inches)	Type of mine	Method of production	Tonnage produced in 1990	Days in production in 1990	Disposition		Employment			State mine number	
									Method	Tonnage	Production		Non- produc- tion		
											Under- ground	Sur- face			
CARROLL COUNTY — (continued)															
	Horizon Coal Corp.	Whitacre-Greer	Rose	5	30	surface	strip	113,350	201	truck	113,350		6	2	Cl-H ⁴
		James Bros. Coal Co.	Rose	6	30 22	surface	strip auger Total	14,011 579 14,590	186	truck	14,590		19	5	Cl-17 ⁵
	James Bros. Coal Co.	Rose	6	22	surface	strip auger Total	77,096 14,728 91,824		truck	89,564					Cl-162
		Harlem Pit	Lee	H	24	surface	strip auger Total	30,184 8,393 38,577	305	truck	38,577		4	1	Cl-241
	Carl Noble & Son, Inc. Regal Mining, Inc.	Noble Strip	Lee	H	20	surface	strip	1,796	120	truck	1,796		1	1	Cl-237
		Buckeye	Lee	H	15	surface	strip	1,550	322	truck	1,550		22	13	Cl-239 ⁶
		Selway	Lee	H	19	surface	strip auger Total	111,876 2,874 114,750		truck	114,750				Cl-244
	Beaver Creek Resources, Inc. Blum Coal Co.	Huggins	Perry	H	10	surface	strip	2,779		truck	2,779				Cl-228
		Camp Ecco	Perry	H	18	surface	strip	44,793		truck	44,793				Cl-233
Copeland		Perry	H	18	surface	strip	1,008		truck	1,008				Cl-R ⁴	
COLUMBIANA COUNTY — Total production = 1,053,887 tons															
Beaver Creek Resources, Inc. Blum Coal Co.	Beaver Creek Resources, Inc.	Salem	6	27	surface	strip	8,116		truck	8,116				Ca-855	
	Jackson-Strabula Job	Center	6A	20	surface	strip	10,547	230	truck	10,547		2		Ca-944	
	Minick Job	Center, Wayne	7	22	surface	strip	13,387	206	truck	13,387		3		Ca-950	
	DeAngelo-Summitville Job	Franklin	6	22	surface	strip	14,423	219	truck	14,423		2	1	Ca-938	
	Mountain Spring/Sheridan Mine	Wayne	7	24	drift	cont. miner	136,276	221	truck	136,276	11		1	Ca-963	
Buckeye-Industrial Mining Co.	Mountain Spring Coal Co. #13	Wayne	6A	40	drift	cont. miner	77,003	71	truck	77,003	15		1	Ca-964	
	Mountain Spring Coal Co. #6	Wayne	6A	44	drift	cont. miner	314,854	216	truck	343,306	24	7	4	Ca-978	
			7	35	surface	strip Total	28,452 343,306							Ca-S ⁴	
	Springer	Wayne	7		surface	strip auger Total	20,409 9,404 29,813	280	truck	29,813		4		Ca-977	
Center Mining Co. Commercial Minerals, Inc.	Sheridan/West Point Mine #7	Yellow Creek	7	50	drift surface	cont. miner strip Total	44,871 5,694 50,565	168	truck	50,565	14		4		
	C. Ullom Lisbon	Center Elkrun	6A 7	12 20	surface surface	strip auger Total	2,744 74,930 13,950 88,880	148 190	truck truck	2,744 88,880		2 10	1	Ca-961 Ca-951	
	West Point	Madison	7	24	surface	strip auger Total	125,252 10,012 135,264	247	truck	135,264		14	1	Ca-919	
D. & D. Mining Co.	Saviers Mine	Unity	4 5	30 10	surface	strip	80,407	280	truck	80,407		11	10	Ca-348	

COLUMBIANA COUNTY — Total production = 1,053,987 tons

Company	Mine	7	18	surface	strip	46,746	165	truck	53,785	9	1	Ca-968
East Fairfield Coal Co.	Salem	8	48	surface	strip	4,413	128	truck	4,413	1	1	Ca-952
John Glenn Mining Co.	Middleton	7	30	surface	strip	11,997	134	truck	11,997	4	1	Ca-972
COSHOCTON COUNTY — Total production = 2,117,347 tons												
Algem Coal Development Co., Inc.	Noble Pit	6	18	surface	strip	93,170	261	truck	93,670	14	2	Cn-NE ⁴
	Tuscarawas			auger	Total	500						
				Total		93,670						
Holmes Limestone Co.	Oxford	6	30	surface	strip	2,156	25	truck	2,156	2	3	Cn-A ⁴
Miller Mining, Inc.	Mill Creek	5.6		surface	strip	84,117	118	truck	84,117	4	1	Cn-832
Oxford Mining Co.	Garber Pit	6		surface	strip	34,024	232	truck	34,024	4	7	Cn-826
	Franklin, Jackson	6		surface	strip	169,707	175	truck	184,133	8	7	Cn-831
				auger	Total	14,426						
				Total		184,133						
Humphrey	Oxford	5		surface	strip	3,442	20	truck	4,646	1	1	Cn-238
				auger	Total	1,204						
				Total		4,646						
Peabody Coal Co.	Linton	5	24	surface	strip	541,353	221	truck	173,725	100	33	Cn-799
		6	40	auger	Total	163,284		conveyor	539,469			
				Total		704,637		Total	713,194			
R & F Coal Co.	Adams, Oxford	5	30	surface	strip	189,568	291	water	90,314	17	4	Cn-824
		6	30	auger	Total	7,200		truck	83,078			
				Total		196,768		Total	173,392			
Wentz-Green	Oxford	6	20	surface	strip	17,227	18	water	1,383	1	7	Cn-814
								truck	12,965			
								Total	14,348			
Hathaway-Isleta	Oxford	5	30	surface	strip	496,070	219	water	183,252	43	10	Cn-HI ⁴
		6	30	auger	Total	1,675		truck	244,354			
				Total		497,745		Total	427,606			
Wolf-Isleta	Oxford	5	30	surface	strip	267,369	192	water	155,664	31	7	Cn-RF ⁴
		6	30	auger	Total	3,492		truck	94,284			
				Total		270,861		Total	249,948			
Orange Pit	Adams	6	27	surface	strip	3,797	46	truck	4,331	1	2	Cn-822
				auger	Total	534						
				Total		4,331						
Adams	Keene	6	42	surface	strip	23,032	128	truck	23,032	3	1	Cn-RR ⁴
GUERNSEY COUNTY — Total production = 156,140 tons												
Empire Coal Co.	Anco Mining, Inc.	7	26	surface	strip	47,050	262	truck	50,762	9	3	Gy-310
				auger	Total	3,712						
				Total		50,762						
R. T. G., Inc.	Valley	7	48	surface	strip	96,580	149	truck	105,378	11	2	Gy-305
				auger	Total	8,798						
				Total		105,378						
HARRISON COUNTY — Total production = 2,040,603 tons												
Consolidation Coal Co.	Mahoning Valley 36	8	57	surface	strip	1,078,765	207	truck	1,078,765	52	15	Hn-700
Harrison Mining Corp.	Cadiz Portal	9	47	slope	cont. miner	43,062	60	rail	15,575	20	3	Hn-710
		7						truck	30,290			
								Total	45,865			
Huberta Coal Co.	Rose Valley	8	56	surface	strip	50,467	254	truck	50,467	12	5	Hn-222 ^{8a}
R & F Coal Co.	Lamborn	8A	16	surface	strip	31,627	97	truck	31,627	4	2	Hn-218
		8	55									
		8A	15									
		9										

¹No mine number has been assigned by the Division of Mines.

²Employment reported for Cl-17 includes employment for Cl-162.

³Employment reported for Cl-239 is a summary of employment for all Regal Mining, Inc., operations.

⁴Figures lower than one employee per month.

⁵Employment reported for Hn-222 includes employment for Jfn-795 (Schiappa Coal Co., Inc.).

1990 OHIO DIRECTORY OF PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of company	Name of mine	Township	Seam	Thick- ness (inches)	Type of mine	Method of production	Tonnage produced in 1990	Days in production in 1990	Disposition		Employment		State mine number
									Method	Tonnage	Production		
											Under- ground	Sur- face	
HARRISON COUNTY (continued)													
R & F Coal Co. (con't)	Harrah West	Green	8 8A	56 12	surface	strip auger Total	155,398 14,126 169,524	250	water truck Total	113,762 58,086 171,848	13	3	Hn-748
	Tasa	Green, Short Creek	8 8A 9	59 26 18	surface	strip auger Total	69,028 1,172 70,200	271	water truck Total	46,921 21,816 68,737	6	1	Hn-225 ^{ab}
	Lamborn South	Green, Short Creek	8 8A	60 20	surface	strip	32,232	33	truck	32,232	2	1	Hn-236
	Reppart	Short Creek	8 8A 9	20 40	surface	strip	36,728	252	water truck Total	21,465 14,962 36,427	3	1	Hn-223
	Duncanwood	Short Creek	8 9	56 30	surface	strip auger Total	308,229 3,384 311,613	292	water truck Total	217,012 93,691 310,703	27	6	Hn-227
	Matusek-Heil	Short Creek	8 8A	60 11	surface	strip	34,102	144	water truck Total	25,004 9,040 34,044	3	1	Hn-M ⁹
	Myers North	Short Creek	8A	13	surface	strip	5,020	68	water truck Total	3,118 1,702 4,820	1	10	Hn-MN ⁹
	Snyder Pit Smith	Green Cadiz	8 8 8A	60 54 22	surface	strip strip auger Total	2,041 20,500 1,264 21,764	8 67	truck truck	2,041 21,764	10 10	3	Hn-747 Hn-750
	Varkony Mining Co. W.B. Coal Co., Inc.	Green German	8,8A H	24	surface	strip strip	25,720 127,738	147 59	truck truck	25,720 127,738	6 20	1 2	Hn-217 Hn-738
	HOCKING COUNTY — Total production = 96,736 tons												
David Boyle, Inc. Crooksville Coal Co., Inc.	No. 1 Strip Crooksville Strip	Ward Green	6A 5	34 20	surface surface	strip strip	6,961 1,791	97 6	truck water truck Total	6,961 108 1,797 1,905	3 1	1 1	Hg-321 Hg-C ⁹
	Hocking Valley Mining	Ward	5 6 6A	36 96 32	surface	strip	31,789	250	truck	31,789	6	1	Hg-324
	Tri-State Coal Sales, Inc.	Ward	6 6A	32 40	surface	strip	18,586	88	truck	18,586	19	1	Hg-325
	Valley Coal Corp.	Darnac Oliver Pit	Starr Starr	6,6A 6A	24	surface surface	strip strip	36,878 731	235	water water	36,878 731	5	3
HOLMES COUNTY — Total production = 459,129 tons													
Holmes Limestone Co.	Farmerstown 557	Clark Clark	5,6 5,6	30 30	surface surface	strip strip	68,545 152,914	196	truck	68,545	4	1	Hs-92
	Charm	Clark, Walnut Creek	5,6	30	surface	strip	130,902	296	truck	152,914	7	1	Hs-97
	241 Plant	Hardy	4	24	surface	strip	19,594	178	truck	130,902	7	1	Hs-86
Miller Mining, Inc.	Wayne Mines	Prairie	4	24	surface	strip	34,023	296	truck	19,594	5	10	Hs-67
	Trail Pit	Walnut Creek	5	5	surface	strip	53,151	143	truck	34,023	4	1	Hs-79 ¹²
					surface	strip		255	truck	53,151	4	1	Hs-94

COAL OPERATORS DIRECTORIES

JACKSON COUNTY — Total production = 1,200,883 tons									
Davis Coal Co. Elk Coal, Inc.	Newt Mine #1 Oak Hill	Bloomfield Franklin	5	36	drift	conventional strip	200 998	6	13
LaMay Industries, Inc.	Bowling Strip LaMay-Gimmore	Milton Bloomfield	4 4.5 4A	48 34 24	surface surface	strip strip	55,096 78,664	301 64	10 8 4
Quality Coal Co.	Buckeye Furnace	Milton	5 6 7	24 24 24	surface	strip	149,932	121	12
Sands Hill Coal Co., Inc.	Sands Hill Strip #4	Milton	4A 5 6	40 50 50	surface	strip	175,554	127	16
Stewart Coal Co. Waterloo Coal Co., Inc.	White Pit Bowman Strip	Liberty Bloomfield, Madison	1 4A 5 6	48 34	surface surface	strip strip	68,044 672,395	261 261	11 37
JEFFERSON COUNTY — Total production = 2,086,436 tons									
Anthony Mining Co., Inc.	Pipo #51 Maine 307	Knox, Saline Wayne	8 8 8A	40 54 16	surface surface	strip strip auger Total	90,262 145,523 12,202 157,725	245 261	21 16
Boich Mining Co. C L A Coal Co.	Boich Mining Co. Dungen	Cross Creek Mount Pleasant	8 8	56 60	surface surface	strip strip auger Total	350,196 76,030 22,574 98,604	195 256	33 11
D & L Contractors, Inc.	D & L Strip	Smithfield	8 8A	56 18	surface	strip	78,967	235	16
F & M Coal Co. Ohio Coal & Construction Corp.	Piney Fork F & M Strip No. 36 Strip-Kackley	Smithfield Wayne Wells	8.8A 8 8 8A	54 48 22	surface surface surface	strip strip strip	5,126 20,842 38,522	60 110 196	1 3 6
Ohio Edison Co. R & F Coal Co.	Ohio Edison Co. Strip Mine Tasa	Knox Smithfield	8 8 8A	40 59 26	surface surface	strip strip auger Total	128,911 68,950 1,669 70,619	208 272	16 6
	Varkony-Polen	Wayne	8 8A	50 15	surface	strip	313,961	289	27
	Arrowhead	Wayne	8 8A 9	50 16	surface	strip auger Total	171,514 16,148 187,662	292	15
	Polen II	Wayne	8 8A	50 16	surface	strip auger Total	88,918 35,960 94,497	165	8
Schiappa Coal Co., Inc.	Smith 487	Smithfield	8 8A 8	56 20 60	surface	strip	23,845	280	16
Valley Mining, Inc.	York	Green, Smithfield	8A	22	surface	strip auger Total	203,009 8,998 212,007		

⁸⁸See also Jefferson County.
⁹⁰No mine number has been assigned by the Division of Mines.
¹⁰Averages fewer than one employee per month.
¹¹Employment reported for Hg-295 includes employment for Hg-V.
¹²See also Wayne County.
¹³Production only, no sales. All tonnage stored.
¹⁴See also Vinton County.
¹⁵See also Harrison County.
¹⁶Employment for Jfn-795 is included with Hn-222 (Huberta Coal Co.).

1990 OHIO DIRECTORY OF PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of company	Name of mine	Township	Seam	Thick- ness (inches)	Type of mine	Method of production	Tonnage produced in 1990	Days in production in 1990	Disposition		Employment		State mine number	
									Method	Tonnage	Production			Non- produc- tion
											Under- ground	Sur- face		
JEFFERSON COUNTY (continued)														
Weirton Construction Co. Zimnox Coal Co.	#19 Zimnox #4	Wells Wells	8 8	54 50	surface surface	strip strip	166,204 48,188	252 91	truck truck	166,412 48,188	31 11	2 10	Jfn-687 Jfn-703	
LAWRENCE COUNTY — Total production = 316,025 tons														
Belleville Mining Co., Inc.	Ohio #1	Washington	4A 5 6	30 30	surface surface	strip strip	295,237	148	truck	295,237	68	7	Le-450	
Waterloo Coal Co., Inc.	Blackfork Pit	Washington	5 6	20	surface surface	strip strip	20,788	90	truck	20,788	7		Le-451	
MAHONING COUNTY — Total production = 191,160 tons														
East Fairfield Coal Co.	"HP" Mine	Springfield	4 6	28 9	surface surface	strip auger	154,722 20,162	256	truck	174,346	20	2	Mg-626	
														Total
Thompson Bros. Mining Co.	Peres Mine	Beaver	4	30	surface	strip	16,276	200	truck	16,276	6	3	Mg-65	
MEIGS COUNTY — Total production = 4,335,439 tons														
Southern Ohio Coal Co.	Meigs Mine #2	Columbia	4A	57	shaft	longwall cont. miner	2,638,918 623,428	263	truck conveyor	1,045,642 2,259,102	364	138	Ms-294	
														Total
	Meigs Mine #31	Salem	4A	57	shaft	longwall cont. miner	700,984 372,109	132	truck conveyor	353,828 733,189	197	186	Ms-293 ¹⁷	
														Total
MONROE COUNTY — Total production = 2,540,848 tons														
Quarto Mining Co. (sub- sidiary of Consolidation Coal Co.)	Powhatan #4	Salem	8	60	shaft	longwall cont. miner	2,106,387 434,461	243	water truck	1,754,880 570,779	233	132	Me-4	
														Total
MORGAN COUNTY — Total production = 43,243 tons														
Central Ohio Coal Co.	Muskingum Mine	Meigsville	9	46	surface	strip	43,243	14	truck conveyor	26,107 17,136	4	9	Ne-41 ¹⁸	
MUSKINGUM COUNTY — Total production = 349,773 tons														
Central Ohio Coal Co.	Muskingum Mine	Meigs	9	45	surface	strip auger	239,458 21,307	44	conveyor	260,765	30	41	Ne-41 ¹⁹	
Oxford Mining Co.	Waters	Monroe	6		surface surface	strip auger	19,466 1,514	40	truck	20,980	7	3	Mum-901	
														Total
Sands Mining Corp.	Mont Pit	Washington	5 6	30 30	surface surface	strip auger	52,234 15,794	77	truck	77,469	20	7	Mum-900	
														Total
Thompson Mining Co.	Harkness Pit	Newton	5,6	45	surface			20	truck	7,816		2	Cy-308	

¹⁷See also Vinton County.
¹⁸See also Morgan and Noble Counties.
¹⁹See also Morgan and Noble Counties.
²⁰Production sales only.
²¹At \$1.00 per employee per month.
²²See also Washington County.
²³See also Morgan and Muskingum Counties.
²⁴Mining information reported for Py-317.
²⁵Mining information for Sk-196 is included with information for Sk-221.
²⁶No mine number has been assigned by the Division of Mines.

1990 OHIO DIRECTORY OF PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of company	Name of mine	Township	Seam	Thick- ness (inches)	Type of mine	Method of production	Tonnage produced in 1990	Days in production in 1990	Disposition		Employment		State mine number
									Method	Tonnage	Under- ground	Production Sur- face	
TUSCARAWAS COUNTY (continued)													
Empire Coal Co. (con't)	Dichler-Riggle	Salem	6	30	surface	strip auger Total	9,972 3,845 13,817	35	truck	13,817	2	2	Ts-1964
	Valley Mining, Inc.	Salem	5 6	30 28	surface	strip auger Total	45,174 12,993 58,167	101	truck	58,167	11	3	Ts-2015
Fairpoint Coal Co.	7 Mile Drive	Fairfield	6	48	surface	strip	25,614	215	truck	25,614	7	5	Ts-2012
	Stone Creek	Jefferson, York	5 6	30 30	surface	strip	4,551	14	truck	4,551	2	1	Ts-2023
Holmes Limestone Co.	Dennison	Rush	7	30	surface	strip auger Total	103,172 39,735 142,907	296	truck	142,907	10	1	Ts-2017
	Johnson I Johnson II	Dover Dover	5 4	42 24	surface	strip strip	10,459 17,732	17 33	truck truck	10,459 17,732	27 1	1 1	Ts-1995 Ts-J ²⁸
J D Mining, Inc.	Baltzley Valley Mine Craig Pit	Goshen Goshen	6 7 5A	18 18 42	surface	strip strip auger Total	10,045 73,311 4,340 77,651	100 264	truck truck	10,045 77,651	2 6	1 2	Ts-2000 Ts-JD ²⁸
	Kimble Clay & Limestone Co.	Dover	3A 4	20 20	surface	strip	52,767	102	truck	52,767	4	1	Ts-K1 ²⁸
Kimble Clay & Limestone Co.	Kimble Clay & Limestone Co.	Dover	5 5 6	28 36	surface	strip auger Total	84,982 754 85,736	119	truck	85,736	3	1	Ts-K2 ²⁸
	Kimble Clay & Limestone Co.	Dover	3A 4	20 20	surface	strip	29,511	64	truck	29,511	4	1	Ts-K3 ²⁸
L & M Mineral Co.	Kimble Clay & Limestone Co.	Dover, Sugar Creek	5 5 6 7	28 36	surface	strip	21,639	58	truck	21,639	3	2	Ts-1727
	Kimble Clay & Limestone Co.	Auburn, York	5 6	26 36	surface	strip	31,539	116	truck	31,539	4	1	Ts-2019
Red Malcuit, Inc.	Kimble Clay & Limestone Co. Evans Luikert	Sugar Creek, Wayne Mill, Rush Mill, Warwick	3A 7 5,6	20 40	surface	strip strip strip auger Total	4,268 12,124 61,564 14,987 76,551	44 149 149	truck truck truck	4,268 12,124 76,551	4 6 10	1 1 1	Ts-2022 Ts-1884 Ts-1914
	Spring RMI #2	Mill, Warwick Franklin	6 3A 4	23 18	surface	strip strip auger Total	202 41,654 418 42,072	20 234	truck truck	202 42,072	1 7	27	Ts-1982 Ts-2007
Miller Mining, Inc.	RMI #1	York	5 6	30 36	surface	strip auger Total	107,201 1,523 108,724	281	truck	108,724	11		Ts-1918
	Schindler-Fondriest Newton	Dover Franklin	5,6 3A		surface	strip strip	82,452 19,192	255 101	truck truck	54,587 19,192	5 2		Ts-197 Ts-2020

Shrock-Troyer	Sugar Creek	3A,4	surface	strip	75,949	255	rail truck Total	9,382 47,060 56,442	8	1	Ts-2002
Troyer-Gordon Mast-Miller et al.	Sugar Creek Sugar Creek	3A,4 5,6	surface surface	strip strip	31,130 87,978	240 191	truck rail truck Total	31,130 43,886 44,092 87,978	4 8	27	Ts-2008 Ts-2010
Bose R. & E. Coal Co. DeLong-Wilsterman	Wayne Sandy Mill	3A,4 6 7	surface surface surface	strip strip strip	12,996 3,083 13,796	107 27 94	truck truck water truck Total	12,996 3,083 9,623 4,956 14,579	1 1 1	27	Ts-2009 Ts-2006 Ts-DW ²⁸
Heddeston	Mill	7	surface	strip	34,777 18,694 53,471	180	truck	53,471	6	2	Ts-2005
Lattavo	Mill	5 6 7	surface	strip auger Total	117,284 21,057 138,341	281	truck	138,341	15	4	Ts-2011
Fouts	Rush	7	surface	strip auger Total	7,657 2,141 9,798	105	truck	9,798	2	1	Ts-1983
Gibson	Salem	6 7	surface	strip auger Total	9,743 14,024 23,767	161	truck	23,767	6	2	Ts-2014
Page	Union	7	surface	strip auger Total	26,754 8,425 35,179	167	truck	35,179	4	1	Ts-1999
Zoar Mining Co.	Sandy	4	surface	strip	1,489	1	truck	1,489			Ts-540
VINTON COUNTY — Total production = 2,444,537 tons											
B. & D. Coal, Inc.	Clinton	3 4 4	surface	strip	3,276	17	truck	3,276	27		Vn-623
	Clinton	3 4 4	surface	strip	29,339	120	truck	29,339	2		Vn-B ²⁸
	Clinton	3 4 4	surface	strip	30,592	125	truck	30,592	2	11	Vn-BD ²⁸
Benedict, Inc.	Clinton Elk	4, W W, 4A, 5	surface surface	strip strip	29 29		truck truck				Vn-183 Vn-184
	Elk	W 4A 5 6 5	surface	strip	29		truck				Vn-187
	Swan Elk	4, 5	surface surface	strip strip	29 185,278	140	truck water truck Total	46,040 139,238 185,278	18	5	Vn-172 Vn-163
R. A. Eberts Co., Inc.	Elk Madison	4 3 4 5	surface surface	strip strip	42,656 218,830	60 140	truck truck	42,656 218,830	2 7	11 3	Vn-186 Vn-182
McArthur Lumber & Post Co., Inc.	Elk	3	surface	strip	5,671	85	truck	5,671	2		Vn-189

²⁷Averages fewer than one employee per month.²⁸No mine number has been assigned by the Division of Mines.²⁹No report was filed in 1990.

1990 OHIO DIRECTORY OF PRODUCING COAL-MINE OPERATORS, BY COUNTY—Continued

Name of company	Name of mine	Township	Seam	Thick- ness (inches)	Type of mine	Method of production	Tonnage produced in 1990	Days in production in 1990	Disposition		Employment		State mine number
									Method	Tonnage	Under- ground	Production Sur- face	
VINTON COUNTY (continued) Quality Coal Co. R & S Coal Co., Inc. Sands Hill Coal Co., Inc.	3300 Pit	Clinton	4	24	surface	strip	340,595	217	truck	340,595		24	Vn-191
			5	24									
			6	24									
	Rte. 50 Pit	Elk	4	24	surface	strip	163,419	155	truck	163,419		13	Vn-188
			5	24									
			6	24									
	R & S Strip Sands Hill Strip #1	Clinton Clinton	3	30	surface	strip	8,179	34	truck	8,179		2	Vn-173
			W	30	surface	strip	3,700	253	water truck	1,450 2,250		23	Vn-641 ³⁰
							Total		Total	3,700			
Southern Ohio Coal Co.	Sands Hill Strip #3	Clinton	W	24	surface	strip	164,356		water truck	69,452 94,904			Vn-S31
			4A	34					Total	164,356			
			5	15									
	Sands Hill Strip #4	Clinton	6	15									
			6A	14									
			4A	40	surface	strip	175,553	126	water truck	73,854 101,699		16	Jkn-SH ^{31, 32}
Washington County — Total production = 64,281 tons	Meigs Mine #31	Wilkesville	5	50									
			6										
			4A	57	drift	longwall cont. miner	700,984 372,109	131	truck conveyor	564,458 522,559	197	185	Ms-293 ³³
	Ullman	Salem				Total	1,073,093		Total	1,087,017			
Wayne County — Total production = 34,022 tons	Wayne Mines	Franklin	9	30	surface	strip	64,281	146	truck	64,281		4	Ne-151 ³⁴
			4	24	surface	strip	34,022	140	truck	34,022		4	Hs-79 ³⁵

³⁰Employment reported for Vn-641 includes employment for Vn-S.³¹No mine number has been assigned by the Division of Mines.³²See also Jackson County.³³See also Meigs County.³⁴See also Noble County.³⁵See also Holmes County.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Agg Rok Materials Div. of Wapak Sand & Gravel Co. 711 Frank Rd. Columbus, OH 43223 614-443-0466 Ralph E. Heffner, pres.	Agg Rok Materials (94)	Franklin	sand & gravel	345,008	299,632	Fn-36	IM-302
Akzo Salt, Inc. P.O. Box 6920 Cleveland, OH 44101 216-651-7200 Alan B. Graf, pres.	Cleveland Mine (1)	Cuyahoga	salt	2,028,009	2,099,121	Cya-30	
Akzo Salt, Inc. 2065 Manchester Rd. Akron, OH 44309-0149 216-745-0031 Alan B. Graf, pres.	Akzo Salt, Inc. (4)	Summit	salt	225,051	232,939	St-9127	
Alan Stone Co., Inc. P.O. Box 127 Chesterhill, OH 43728 614-554-6191 Ruth E. Janes, pres.	Alan Stone Co., Inc. (43)	Washington	sandstone	¹		Wn-45	IM-125
William Albert, Inc. 1300 Cassingham Hollow Rd. Coshocton, OH 43812 614-622-3045 William Albert, pres.	William Albert, Inc. (438) (88)	Coshocton	sand & gravel clay	45,683 ¹	47,231	Cn-828	IM-1026
Alden Sand & Gravel Co. 2584 Northampton Rd. Cuyahoga Falls, OH 44223 216-928-3249 Joan Alden, pres.	Alden Sand & Gravel Co. (496)	Summit	sand & gravel	7,448	7,448	St-55	IM-932
All Stone Co. 8858 County Rd. 192 Fredericksburg, OH 44627 216-695-3401 Joe L. Knott & Abe L. Miller, partners	All Stone Co. (153)	Coshocton	limestone	8,045	8,045	Cn-A ²	IM-1011
Allgeier & Son, Inc. 6386 Bridgetown Rd. Cincinnati, OH 45248 513-574-3735 Earl W. Allgeier, pres.	Allgeier & Son, Inc. (467)	Hamilton	sand & gravel	¹		Hmn-AS ²	IM-1106
Allied Corp., Inc. 1750 Highland Dr. Twinsburg, OH 44087 216-425-7861 Charles Rauh, pres.	Allied Corp., Inc. (435)	Stark	sand & gravel	¹		Sk-173	IM-879
American Aggregates Corp. P.O. Box 147515 Dayton, OH 45413-7515 513-454-1128 Geoff C. Harris, pres.	Hamilton #710 (29) Fairfield #711 (30) Urbana #410 (48) Springfield #423 (16) Fairborn #413 (52) Fort Jefferson #424 (19) Shawnee #225 (20) Blue Rock Limestone #222 (27) Marble Cliff #224 (30) Columbus #210 (95) Lockbourne #213 (96) Columbus Limestone #221 (31) Cedarville Limestone #425 (32) Fairborn Limestone #431 (142) Haines Rd. #419 (405) Xenia #414 (110) Spring Valley Gravel #434 (404) Beaver Creek Limestone #426 (155) Harrison #712 (118) Kilby Rd. #713 (119) Newark #214 (174) Troy Gravel #433 (219)	Butler Butler Champaign Clark Clark Darke Delaware Fayette Franklin Franklin Franklin Franklin Greene Greene Greene Greene Greene Greene Hamilton Hamilton Licking Miami	sand & gravel sand & gravel sand & gravel limestone sand & gravel limestone limestone limestone limestone sand & gravel sand & gravel limestone limestone sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel	538,275 1,331,319 209,729 121,142 459,447 400,707 606,433 418,315 1,856,205 1,408,913 241,839 2,121,120 223,408 347,629 117,085 454,029 345,755 15,875 522,470 446,048 420,835 328,047	536,069 1,452,928 286,251 190,180 555,067 432,735 688,034 286,507 2,171,718 1,893,049 440,542 2,296,067 284,885 278,429 90,253 574,873 684,409 208 678,327 451,643 473,120 341,309	Br-5 Br-35 Cpn-1 Ck-1 Ck-13 Dke-1 Del-4 Fe-2 Fn-2 Fn-6 Fn-23 Fn-53 Ge-17 Ge-25 Ge-32 Ge-33 Ge-42 Ge-45 Hmn-37 Hmn-AAC ² Lg-2 Mi-3	IM-153 IM-200 IM-371 IM-373 IM-366 IM-362 IM-262 IM-169 IM-261 IM-185 IM-183 IM-185 IM-435 IM-437 IM-400 IM-379 IM-954 IM-364 IM-170 IM-716 IM-184 IM-462

¹No sales or production.²No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
American Aggregates Corp. (con't)	Piqua Gravel #430 (216) Tipp City Gravel #435 (220) Phillipsburg Limestone #421 (70) Dayton Limestone #420 (71) Huber Heights Limestone #432 (143) Dayton South #412 (223) Rip Rap Road #416 (224) American Aggregates Corp. (477) Circleville #216 (251)	Miami Miami Montgomery Montgomery Montgomery Montgomery Montgomery Montgomery Pickaway	sand & gravel sand & gravel limestone limestone limestone sand & gravel sand & gravel sand & gravel sand & gravel	52,186 13,086 419,087 243,999 214,460 ³ 451,035 ³ 265,409	39,164 10,387 499,087 356,670 219,143 ³ 460,883 ³ 318,531	Mi-6 Mi-8 My-1 My-23 My-32 My-33 My-66 My-A ⁴ Pky-1	IM-356 IM-355 IM-374 IM-368 IM-1012 IM-361 IM-677 IM-1012 IM-409, IM-428, IM-668
	Lytle Limestone #422 (125) Franklin #714 (349)	Warren Warren	limestone sand & gravel	41,921 303,101	0 329,701	Wan-35 Wan-38	IM-112 IM-615
American Olean Tile Co., Inc. Lewispport, KY 42351 502-295-3411 Hervey Howell, mgr.	Jefferys (24)	Lawrence	clay	8,767	11,034	Le-440	IM-828, IM-902
American Sand & Gravel 8188 Wales Rd. NW North Canton, OH 44720 216-494-6455 Christopher Scala, pres.	American Sand & Gravel (387) American Sand & Gravel (386) American Sand & Gravel (455) American Sand & Gravel (337)	Portage Stark Stark Summit	sand & gravel sand & gravel sand & gravel sand & gravel	5,270 107,000 ³ 104,370	5,270 107,000 ³ 104,370	Pe-ASG ⁴ Sk-203 Sk-243 St-29	IM-212 IM-654 IM-908 IM-203
Apache Aggregate & Paving Co. 46626 County Rte. 495 Coshocton, OH 43812 614-622-5904 Charlene Ross, pres.	Apache Aggregate & Paving Co. (69) Apache Aggregate & Paving Co. (70)	Coshocton Coshocton	sand & gravel sand & gravel	³ 126,580	³ 69,570	Cn-718 Cn-783	IM-227 IM-717
Ashcraft Sand & Gravel, Inc. 5840 Dry Fork Rd. Cleves, OH 45002 513-367-2177 Otis Ashcraft, pres.	Ashcraft Sand & Gravel, Inc. (120)	Hamilton	sand & gravel	59,437	59,437	Hmn-54	IM-710
Athens Hocking Reclamation Center 35380 Hocking Dr. P.O. Box 946 Logan, OH 43138 614-385-3264 Edward F. Kilbarger, pres.	Athens Hocking Reclamation Center (81)	Athens	clay	210	93	As-594	
Atlantic Investment Co. 4530 Talmadge Green Toledo, OH 43623 419-471-9589 Greg Trala & Tom Crawford, partners	Atlantic Investment Co. (471)	Lucas	sand & gravel	24,000	24,000	Ls-AI ⁴	IM-1058
Atlas Stone Co. P.O. Box 1187 Uniontown, PA 15401 216-536-6275 George E. Udding, pres.	Atlas Stone Co. (160)	Lucas	limestone	250,000	250,000	Ls-12	IM-953
Atlas Towing Co. P.O. Box 1632 Parkersburg, WV 26101 304-428-0341 Christopher V. Criss, pres.	Belpre Bank Run (432)	Washington	sand & gravel	27,514	27,514	Wn-54	IM-383
Aurora Sand & Gravel, Inc. 60 Treat Rd. Aurora, OH 44202 216-641-0300 Gary Helf, pres.	Aurora Sand & Gravel, Inc. (260)	Portage	sand & gravel	173,976	174,421	Pe-84	IM-868
Ayers Limestone Quarry, Inc. 2000 Colerain Pike P.O. Box 67 Martins Ferry, OH 43935 614-633-2958 Thomas E. Ayers, pres.	Ayers Limestone Quarry, Inc. (12)	Belmont	limestone	91,734	91,734	Bt-716	IM-1
B & D Paving Co. P.O. Box 463 Powhatan Point, OH 43942 304-233-6505 Suzanne Hendershot, pres.	B & D Paving Co. (424)	Monroe	sand & gravel	5,178	5,178	Me-508	IM-1000

³No sales or production.⁴No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
B-M Machine Co. 12264 Princeton Rd. Huntsburg, OH 44046 216-636-5600 Robert Zalar, owner	B-M Machine Co. (442)	Geauga	sand & gravel	5		Gea-39	IM-974
Baker Sand, Inc. 700 White Rd. Burbank, OH 44214 216-948-1448 Thom E. Baker, pres.	Baker Sand, Inc. (203)	Medina	sand & gravel	725,915	725,915	Ma-20	IM-448
Barrett Paving Materials, Inc. 7374 Main St. Cincinnati, OH 45244 513-271-6200 James Brady, pres.	Barrett Paving Materials, Inc. (461) Perintown (59) Newtown Sand & Gravel (434)	Clark Clermont Hamilton	sand & gravel sand & gravel sand & gravel	5 5 0		Ck-B ⁶ Ct-9 Hmn-56	IM-1100 IM-526 IM-631
Barrett Paving Materials, Inc. 9570 State Rte. 128 Harrison, OH 45030 513-271-6200 James Brady, pres.	Miamitown Sand & Gravel (121)	Hamilton	sand & gravel	45,984	10,671	Hmn-44	IM-120
Barrett Paving Materials, Inc. 727 E. Ash St. Piqua, OH 45356 513-773-1933 Lloyd B. Fry, mgr.	Gregory Stone (66) Ticon Corp. (390)	Miami Miami	limestone sand & gravel	221,787 310	244,698 500	Mi-502 Mi-T ⁶	IM-414 IM-696
Beaver Creek Resources, Inc. 7219 Salem-Unity Rd. Salem, OH 44460 216-337-3534 Delyte DeYarmon, pres.	Beaver Creek Resources, Inc. (64) (3)	Columbiana	sand & gravel sandstone	13,739 95,057	13,739 95,057	Ca-855	IM-891
Beaver Excavating Co. 4650 Southway St. SW Canton, OH 44706 216-478-2151 W. M. Sterling, pres.	Beaver Excavating Co. (100)	Portage	clay	5		Pe-B ⁶	IM-1054
Beck Sand & Gravel, Inc. 2820 Webb Rd. Ravenna, OH 44266 216-626-3863 Robert E. Wenrich, pres.	Beck Sand & Gravel, Inc. (256)	Portage	sand & gravel	431,917	431,917	Pe-50	IM-96
Becky Lane Trucking, Inc. 441 Iowa St. Ashland, KY 41101 606-325-8301 Janet Griffiths, pres.	Becky Lane Sand (167)	Lawrence	sand & gravel	11,598	11,598	Le-430	IM-844
Paul D. Beery Trucking Co. 4770 Cincinnati-Zanesville Rd. NE Lancaster, OH 43130 614-653-5061 Paul D. Beery, pres.	Paul D. Beery Trucking Co. (401)	Fairfield	sand & gravel	8,024	2,560	Fd-14	IM-933
Belden Brick Co. P.O. Box 910 Canton, OH 44701 216-852-2424 William H. Belden, Jr., pres.	Moomaw Pit (56) (56) Belden Pit (57) (57) Wallick Pit (58) (58) Shanesville Pit (59) (59) Beagle Pit (60)	Tuscarawas Tuscarawas Tuscarawas Tuscarawas Tuscarawas	clay shale clay shale clay shale clay shale clay	58,841 53,988 13,706 79,791 114,544 20,931 50,634 75,160 32,335	58,841 53,988 13,706 79,791 114,544 20,931 50,634 75,160 32,335	Ts-1517 Ts-1646 Ts-1841 Ts-1939 Ts-1960	IM-46 IM-44 IM-45 IM-47 IM-48
Belu & Son Paving, Inc. 4900 French Creek Rd. Lorain, OH 44054 216-277-7087 John W. Belu, owner	Belu Sand Pit (191)	Lorain	sand & gravel	2,591	2,591	Ln-12	IM-731

⁵No sales or production.⁶No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Belville Mining Co., Inc. P.O. Box 834 Ironton, OH 45638 614-643-2331 Thomas J. Belville, pres.	Belville Mining Co., Inc. (159) (93)	Lawrence	limestone clay	75,962 42,609	75,962 42,609	Le-B ⁷	IM-1072
Benco Leasing, Inc. State Rte. 416 Rte. 3 New Philadelphia, OH 44663-9507 216-339-3339 Ben Cookson, pres.	Goshen Sand & Gravel (389)	Tuscarawas	sand & gravel	28,722	60,522	Ts-1976	IM-941, IM-942
Best Sand Corp. 11830 Ravenna Rd. P.O. Box 87 Chardon, OH 44024 216-946-3441 William E. Conway, pres.	Best Sand Corp. (17)	Geauga	sandstone	486,265	657,820	Gea-3	IM-89
Beverly Slag Co. P.O. Box 599 McConnelsville, OH 43756 614-962-5621 Fred R. Price, pres.	Devola Pit (364)	Washington	sand & gravel	⁸		Wn-55	IM-669
Big Walnut Sand & Gravel Co. 88 W. Mound St. Columbus, OH 43215-5018 614-224-2678 Steven D. Rowe, partner	Big Walnut Sand & Gravel Co. (97)	Franklin	sand & gravel	⁸		Fn-14	IM-832
Black Top Contracting, Inc. P.O. Box 98 Belpre, OH 45714 614-423-5455 Terry R. Wyatt, pres.	Black Top #1 (19)	Athens	sand & gravel	19,119	19,119	As-588	IM-630
E. E. Blair Construction Co. P.O. Box 39 Wheelersburg, OH 45694 614-574-6575 Edwin E. Blair, pres.	Blair Pit (303)	Scioto	sand & gravel	22,783	21,507	So-98	IM-474
Blue Jay Enterprises Rte. 5 Box 44 Dover, OH 44622 216-364-8621 Michael Nugo, owner	Swanger (85) (85)	Tuscarawas	clay shale	34,441 14,231	34,441 14,231	Ts-520	IM-214
Bluffton Stone Co. P.O. Box 26 Bluffton, OH 45817-0026 419-358-6941 Brent C. Gerkin, pres.	Bluffton Stone Co. (3)	Allen	limestone	195,603	195,603	An-1	IM-485
Ray Blum Mining Scio-Carrollton Rd. P.O. Box 232 Carrollton, OH 44615-0232 216-627-2670 Ray Blum, owner	Ray Blum Mining (476) (161)	Mahoning	sand & gravel limestone	⁸ 100	⁸ 100	Mg-B ⁷	IM-1008
Bolin & Bartley, Inc. 1217 County Rd. 1475 R.D. 1 Ashland, OH 44805 419-289-1507 Clarence W. Bolin, treas.	Bolin & Bartley Sand & Gravel (409)	Richland	sand & gravel	49,407	68,800	Rd-20	IM-617
Elmer Borchardt, Inc. 313 E. Lucas St. P.O. Box 188 Castalia, OH 44824-0188 419-684-5361 Dean Wikel, pres.	Elmer Borchardt, Inc. (83)	Erie	sand & gravel	3,519	3,519	Ee-18	IM-676
Bowerston Shale Co. 1329 Seven Hills Rd. NE Newark, OH 43055 614-763-3921 William U. Milliken, pres.	Hanover (31) Frazeyburg (38)	Licking Muskingum	shale clay	25,095 6,336	25,095 6,336	Lg-501 Mum-776	IM-257 IM-256

⁷No mine number has been assigned by the Division of Mines.⁸No sales or production.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Bowerston Shale Co. 515 Main St. Bowerston, OH 44695 614-269-2921 William U. Milliken, pres.	Bowerston (11) Bowerston Shale Co. (109)	Harrison Harrison	shale shale	28,053 ⁹	28,053	Hn-152 Hn-B ¹⁰	IM-42 IM-1020
D. H. Bowman & Sons, Inc. 1201 State Rte. 97 Bellville, OH 44813-1227 419-886-2711 Richard D. Bowman, pres.	D. H. Bowman & Sons, Inc. (287)	Richland	sand & gravel	47,196	49,923	Rd-4	IM-279
Boyas Excavating, Inc. 4100 Brookpark Rd. Cleveland, OH 44134-1196 216-398-3900 Pete Boyas, pres.	Boyas' Valley View Quarry (13)	Cuyahoga	sandstone	⁹		Cya-42	IM-686
Boyd Gravel Co. 24270 Twp. Rd. 1202 Coshocton, OH 43812 614-246-6315 Don E. Mill, pres.	Boyd Gravel Co. (71)	Coshocton	sand & gravel	318,571	293,800	Cn-694	IM-293
Briar Hill Stone Co. P.O. Box 398 Glenmont, OH 44628 216-377-5100 Bill W. Alde, pres.	Quarry #26 (4) Quarry #3 (5) Quarry #32 (6) Quarry #24 (7) Quarry #18 (8) Quarry #54 (46) Quarry #55 (44) Quarry #31 (19) Quarry #6 (23)	Coshocton Coshocton Coshocton Coshocton Coshocton Coshocton Coshocton Holmes Knox	sandstone sandstone sandstone sandstone sandstone sandstone sandstone sandstone sandstone	2,134 6,385 4,485 ⁹ 5,991 ⁹ 3,578 860 140	1,170 6,907 4,192 ⁹ 3,283 ⁹ 2,891 0 943	Cn-13 Cn-659 Cn-686 Cn-692 Cn-695 Cn-809 Cn-815 Hs-49 Kx-12	IM-397 IM-232 IM-504 IM-294 IM-402 IM-909 IM-939 IM-418 IM-445
Briggs Sand & Gravel, Inc. Rte. 4 County Rd. 10 Box 303 Marietta, OH 45750 614-373-3363 James F. Briggs, pres.	Briggs Sand & Gravel, Inc. (365)	Washington	sand & gravel	8,074	8,074	Wn-508	IM-57
Broadway Sand & Gravel, Inc. 2000 Sandridge Dr. Dayton, OH 45439 513-299-1166 George D. Jones, v. pres.	Broadway Sand & Gravel, Inc. (225)	Montgomery	sand & gravel	61,788	61,788	My-65	IM-594
Broshear Contractors, Inc. 2520 Millville-Ross Rd. Hamilton, OH 45013 513-863-3388 Clarence Broshear, pres.	Ross Township Gravel (31)	Butler	sand & gravel	11,180	10,536	Br-48	IM-562
Brown County Rock Crusher State Rte. 221 Georgetown, OH 45121 513-377-2975 Brown County Board of Commissioners	Brown County Rock Crusher (14)	Brown	limestone	4,716	6,932	Bn-1	
D & L Browning Excavating, Inc. 5593 Mason-Morrow-Millgrove Rd. Morrow, OH 45152 513-899-3751 Daniel L. Browning, owner	Riverside Sand & Gravel (391)	Warren	sand & gravel	10	0	Wan-B ¹⁰	IM-679
Browning-Ferris Industries of Ohio, Inc. 530 N. Camp Rd. Port Clinton, OH 43452 419-635-2615 Jim Cosman, pres.	Browning-Ferris Industries of Ohio, Inc. (96)	Ottawa	clay	⁹		Oa-B ¹⁰	IM-1084
Karl Brugmann Sand & Gravel, Inc. 8420 Weaver Rd. Ravenna, OH 44266 216-626-3914 Donald H. Brugmann, owner	Karl Brugmann Sand & Gravel, Inc. (257)	Portage	sand & gravel	94,115	82,649	Pe-15	IM-104

⁹No sales or production.¹⁰No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Oscar Brugmann Sand & Gravel, Inc. 3828 Dudley Rd. Mantua, OH 44255 216-274-8224 Roy Brugmann, pres.	Oscar Brugmann Sand & Gravel, Inc. (258)	Portage	sand & gravel	387,678	510,000	Pe-9	IM-119
James Bunnell, Inc. 5730 State Rte. 128 Cleves, OH 45002 513-353-1100 James Bunnell, pres.	James Bunnell, Inc. (123) James Bunnell, Inc. (124)	Hamilton Hamilton	sand & gravel sand & gravel	23,345 379,744	23,345 379,744	Hmn-50 Hmn-59	IM-205 IM-815
Burlington Sand & Gravel Co. P.O. Box 399 Chesapeake, OH 45619 614-894-5978 Vernon E. Collier, owner	Burlington Sand & Gravel Co. (170)	Lawrence	sand & gravel	9,412	9,412	Le-426	IM-856
C & S Contractors, Inc. P.O. Box 42459 Cincinnati, OH 45242 513-791-7747 Raymond A. Conn, pres.	C & S Contractors, Inc. (356)	Warren	sand & gravel	¹¹		Wan-47	IM-846
Canton Aggregate Div. of Central Allied Enterprises, Inc. P.O. Box 80449 Canton, OH 44708-0449 216-477-6751 John A. Woodhall, Jr., pres.	Canton Aggregate (318) Canton Aggregate (319)	Stark Stark	sand & gravel sand & gravel	439,980 173,426	439,980 164,670	Sk-681 Sk-689	IM-164 IM-173
Carpenter's Excavating 2501 W. Dorothy Lane Moraine, OH 45439 513-299-7328 William D. Carpenter, owner	Carpenter's Excavating (228)	Montgomery	sand & gravel	318	318	My-67	IM-725
Cedar Heights Clay Co. Division of Resco Products, Inc. P.O. Box 295 Oak Hill, OH 45656-0295 614-682-7794 William T. Tredennick, pres.	Gallia Red Sand (507) Shumate/Alban (21) Cedarloo/Jenkins/Greer (22) Katie Walke (91)	Gallia Jackson Jackson Jackson	sand & gravel clay clay clay	513 ¹¹ 26,837 ¹¹	513 26,837	Ga-507 ¹² Jkn-1001 Jkn-1007 Jkn-CH ¹³	IM-1074 IM-19, IM-336 IM-24 IM-1060
Celotex Corp. P.O. Box 280 Port Clinton, OH 43452 419-734-3153 W. D. Herbert, pres.	American #2 (1)	Ottawa	gypsum	204,539	204,539	Oa-2	IM-344
Central Ohio Coal Co. P.O. Box 98 Cumberland, OH 43732 614-962-2013 J. E. Katlic, exec. v. pres.	Horse Run Stone Quarry (73) Central Ohio Coal Co. (165) Coal Hill (166) Hoskinsville Stone Quarry (138)	Morgan Morgan Muskingum Noble	limestone limestone limestone limestone	17,680 ¹¹ 272,264 47,040	17,680 272,264 47,040	Mon-600 Mon-C ¹³ Ne-C ¹³ Ne-147	IM-281 IM-1010 D-0820 IM-921
Central Silica Co. 806 Market St. P.O. Box 4477 Zanesville, OH 43702-4477 614-452-2775 James P. Snider, v. pres. & gen. mgr.	Millwood Sand Division (24) Central Silica Co. (31) Glass Rock (48)	Knox Perry Perry	sandstone sandstone sandstone	134,748 190,200 57,293	134,748 190,200 57,293	Kx-1 Py-202 Py-344	IM-269 IM-14 IM-1014
Charlestown Sand & Gravel, Inc. 7845 State Rte. 5 Ravenna, OH 44266 216-296-9233 Yale Stuble, pres.	Charlestown Sand & Gravel, Inc. (259)	Portage	sand & gravel	26,007	26,007	Pe-17	IM-123
Chattin Concrete 9978 State Rte. 220 P.O. Box 49 Waverly, OH 45690 614-947-4677 William H. & Jeffery Chattin, partners	Chattin Concrete (253)	Pike	sand & gravel	3,729	7,928	Pke-23	IM-242

¹¹No sales or production.¹²This mine number has been duplicated by the Division of Mines.¹³No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Chesterhill Stone Co. 773 East State Rte. 60 NE P.O. Box 599 McConnelsville, OH 43756 614-962-5621 Fred & Carl Price, owners	Plant #2 (240) Chesterhill Stone Co. (478) Plant #1 (75) Plant #3 (366)	Morgan Morgan Muskingum Washington	sand & gravel sand & gravel limestone sand & gravel	354,293 ¹⁴ 548,501 ¹⁴	325,681 535,574	Mon-588 Mon-CS ¹⁵ Mum-106 Wn-56	IM-35 IM-1105 IM-297 IM-857
Chesterville Sand & Gravel Co., Inc. State Rte. 95 E P.O. Box 51 Chesterville, OH 43317 419-768-3369 Carrol D. Gleason, pres.	Chesterville Sand & Gravel Co., Inc. (242)	Morrow	sand & gravel	93,306	93,306	Mw-10	IM-258
Chillicothe Sand & Gravel Co. 1177 Hopetown Rd. Chillicothe, OH 45601 614-775-3751 Don E. Mill, pres.	Chillicothe Sand & Gravel Co. (490)	Ross	sand & gravel	25,147	25,147	Rs-27	IM-1098
Christman Quarry 47278 Swazey Rd. Lewisville, OH 43754 614-838-2475 Gerald L. Christman, owner	Christman Quarry (69) Christman Quarry (163)	Monroe Monroe	limestone limestone	72,350 ¹⁴	72,350	Me-501 Me-C ¹⁵	IM-76 IM-1088
Clark Clay Co. 6918 Township Rd. 310 Millersburg, OH 44654 216-674-5150 Dwight S. Clark, owner	Clark Clay Co. (17)	Holmes	clay	5,342	3,845	Hs-56	
Claycraft Co. P.O. Box 866 Columbus, OH 43216 614-866-3300 P. W. Tefft, pres.	Claycraft Plant #1 Clay Pit (73)	Wyandot	clay	28,275	28,275	Wt-7	IM-407
Cleveland Quarries Co. P.O. Box 261 Amherst, OH 44001-0261 216-986-4501 R. C. Bechtel, pres.	Birmingham Quarry (14) Amherst Quarries (27)	Erie Lorain	sandstone sandstone	2,418 56,548	2,418 56,548	Ee-21 Ln-3	IM-416 IM-415
Cochran Transportation Services, Inc. P.O. Box 578 Athens, OH 45701 614-593-3906 Charles W. Cochran, pres.	Cochran Transportation Services, Inc. (458) (87)	Athens	sand & gravel clay	16,800 ¹⁴	16,800	As-595	IM-1083
Columbia Portland Cement Corp. P.O. Box 1531 Zanesville, OH 43701 614-849-2311 John Gilliland, plant mgr.	Lyle Quarry (76) (112) Columbia Portland Cement Corp. (39)	Muskingum Muskingum	limestone shale shale	522,137 12,891 ¹⁴	522,137 12,891	Mum-24 Mum-C ¹⁵	IM-830 IM-303
Con-Ag, Inc. 16672 County Rd. 66A N St. Marys, OH 45885 419-394-8870 Robert E. Hirschfeld, pres.	Con-Ag, Inc. (10)	Auglaize	limestone	289,114	299,348	Ae-31	IM-744
Connolly Construction Co., Inc. 825 W. Sixth St. P.O. Box 271 Marysville, OH 43040 513-644-8831 Phillip Connolly, pres.	East Liberty Quarry (49)	Logan	limestone	287,211	287,211	Lgn-1	IM-574
Conotton Valley Quarries Co. P.O. Box 207 Sherrods, OH 44675 614-942-4656 Joseph Belden, pres.	Conotton Valley Quarries Co. (1)	Carroll	sandstone	1,640	1,640	Cl-102	IM-278

¹⁴No sales or production.¹⁵No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Cooper Sand & Gravel P.O. Box 427 Russells Point, OH 43348 513-843-3426 Kenneth C. Cooper, owner	Cooper Sand & Gravel (411)	Logan	sand & gravel	2,543	2,543	Lgn-40	IM-996
Cox Gravel Co., Inc. P.O. Box 127 Dresden, OH 43821 614-754-2011 Richard Cox, pres.	Jennings-Lacy (244) Prospect (243) Gilbert Cox (449)	Muskingum Muskingum Muskingum	sand & gravel sand & gravel sand & gravel	147,728 94,356 15,211	179,253 104,631 15,095	Mum-799 Mum-863 Mum-899	IM-317 IM-264
Crates Excavating 14628 State Rte. 31 Kenton, OH 43326 419-675-1558 John Roger & Ruth Crates, owners	Crates #1 (406) Crates Excavating (469)	Hardin Hardin	sand & gravel sand & gravel	¹⁶ ¹⁶		Hdn-5 Hdn-C ¹⁷	IM-907 IM-1081
Cravat Coal Co. 40580 Cadiz-Piedmont Rd. Cadiz, OH 43907 614-942-4656 Anthony Puskarich, pres.	Dover Pit (13)	Belmont	limestone	44,198	44,198	Bt-119	IM-733
Cremeans Concrete & Supply Georges Creek Rd. P.O. Box 475 Gallipolis, OH 45631 614-446-1142 Frank A. Cremeans, pres.	Cremeans Concrete & Supply (440)	Gallia	sand & gravel	7,098	7,098	Ga-626	IM-1046
R. A. Cruise Sand & Gravel, Inc. 7639 State Rte. 14 Ravenna, OH 44266 216-296-4087 Larry R. Cruise, pres.	R. A. Cruise Sand & Gravel, Inc. (261)	Portage	sand & gravel	71,508	71,508	Pe-45	IM-139
Cummins Family Contracting 7703 Twp. Rd. 207 DeGraff, OH 43318 513-585-4032 Richard E. Cummins, owner	Cummins Family Contracting (190)	Logan	sand & gravel	300	300	Lgn-38	IM-881
Cunningham Asphalt Paving, Inc. P.O. Box 370 Wheelersburg, OH 45694 614-574-6184 Karl Cunningham, pres.	Cunningham Pit (304)	Scioto	sand & gravel	¹⁶		So-83	IM-211
D & D Sand Bank Rte. 7 Box 473 South Point, OH 45680 614-377-4765 Eileen Pemberton, owner	D & D Sand Bank (388)	Lawrence	sand & gravel	¹⁶		Le-445	IM-928
D & W Sand & Gravel 10677 Wren Rd. Mechanicsburg, OH 43044 513-834-2548 Dale Potter, owner	D & W Sand & Gravel (49)	Champaign	sand & gravel	10,374	10,374	Cpn-21	IM-616
Darby Gravel 1184 Darby Creek Rd. Orient, OH 43146 614-877-4184 Louis Johnson & Dwight Harris, owners	Darby Gravel (479)	Pickaway	sand & gravel	5,650	5,650	Pky-7	IM-1067
Davis Sand & Gravel 311 Mt. Zion Rd. SW Lancaster, OH 43130 614-687-1876 Richard P. Davis, owner	Davis Sand & Gravel (91)	Fairfield	sand & gravel	2,871	2,871	Fd-12	IM-451
Davon, Inc. 4281 Roush Rd. Hillsboro, OH 45133 513-393-4211 John B. Patton, pres.	Plum Run Stone Division (1) Highland Stone Division (41)	Adams Highland	limestone limestone	1,504,435 658,086	1,536,182 652,762	Ads-1 Hd-2	IM-237 IM-230

¹⁶No sales or production.¹⁷No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Demmy Construction, Inc. 4999 Tecumseh Rd. Springfield, OH 45502 513-325-9429 Daniel E. Demmy, pres.	Kieffer Pit (385) Demmy Construction, Inc. (462)	Clark Clark	sand & gravel sand & gravel	42,243 ¹⁸	42,243	Ck-501 Ck-D ¹⁹	IM-340 IM-1038
Demmy Sand & Gravel 4324 Fairfield Pike Springfield, OH 45502 513-325-8840 Woodrow Demmy, owner	Demmy Sand & Gravel (54)	Clark	sand & gravel	8,040	8,040	Ck-502	IM-375
Dennis Clay Co. 11123 State Rte. 37 East New Lexington, OH 43764 614-342-5473 Tom L. Dennis, owner	Corder Mine (74) Olson Mine (43) Dennis Clay Co. (108) Dennis Clay Co. (113)	Muskingum Perry Perry Perry	clay clay clay clay	9,842 4,328 ¹⁸ 18	9,842 4,328	Mum-D ¹⁹ Py-296 Py-338 Py-D ¹⁹	IM-917 IM-37 IM-1092 IM-1070
A. J. Diana Sons, Inc. 1916 Erie Ave. NW P.O. Box 488 Massillon, OH 44648 216-832-5904 Virgil V. Diana, pres.	Neidert Pit (320)	Stark	sand & gravel	18		Sk-694	IM-858
Dingledine Trucking Service 4560 Oxford-Trenton Rd. Oxford, OH 45056 513-726-5258 Gerald Dingledine, owner	Dingledine Trucking Service (32)	Butler	sand & gravel	58,942	60,650	Br-50	IM-739
Dome Minerals, Inc. P.O. Box 11 Hanoverton, OH 44423 216-223-1413 Fred A. Rogers, pres.	Dome Minerals, Inc. (79)	Columbiana	shale	3,687	3,217	Ca-947	IM-935
Dravo Basic Materials Co., Inc. 5253 Wooster Rd. Cincinnati, OH 45226 513-321-2700 H. Donovan Ross, pres.	Fairfield Plant (33) Ross Plant (34) Cleves Plant (126) Camp Dennison Plant (127) Newtown Plant (128) Cleves Plant (131) Newtown Plant (128) Dravo Basic Materials Co., Inc. (468) Apple Grove Plant (209) South Lebanon Plant (352)	Butler Butler Hamilton Hamilton Hamilton Hamilton Hamilton Hamilton Meigs Warren	sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel	18 391,091 18 776,870 1,240,889 202,501 ²⁰ 18 0 18 18	762,540 953,574 1,311,973 0 12,650	Br-14 Br-29 Hmn-3 Hmn-5 Hmn-11 Hmn-68 Hmn-70 Hmn-D ¹⁹ Ms-205 Wan-41 ²¹	IM-147 IM-149 IM-137, IM-801 IM-148 IM-133 IM-747 IM-133 IM-1079 IM-30 IM-629
Fred J. Dreslinski 2540 Plymouth-Gageville Rd. Ashtabula, OH 44004 216-224-0195 Fred J. Dreslinski, pres.	Fred J. Dreslinski (457)	Ashtabula	sand & gravel	18		Asa-13	
Dry Creek Gravel Co. 2097 Mt. Vernon Rd. Newark, OH 43055 614-366-3333 Gail Wolfe, pres.	Plant #2 (176) Water Works (400) Plant #3 (177)	Licking Licking Licking	sand & gravel sand & gravel sand & gravel	123,300 ¹⁸ 255,400	123,300 255,400	Lg-31 Lg-502 Lg-DC ¹⁹	IM-246 IM-956 IM-354
C. E. Duff & Son, Inc. P.O. Box 295 Huntsville, OH 43324 513-686-2488 James E. Duff, pres.	Portable (444) C. E. Duff & Son, Inc. (50) Duff Sand Co. (182) C. E. Duff & Son, Inc. (420) C. E. Duff & Son, Inc. (183)	Logan Logan Logan Logan Logan	sand & gravel limestone sand & gravel sand & gravel sand & gravel	18 231,520 65,141 ¹⁸ 18 18	231,520 65,141	Lgn-12 Lgn-15 Lgn-31 Lgn-36 Lgn-39	IM-1071 IM-453 IM-454 IM-1007 IM-887
E.M.A.I. Corp. P.O. Box 5250 Poland, OH 44514 216-536-6275 George E. Udding, pres.	Quarry #8 (57) (34) E.M.A.I. Corp. (162) (107) (107)	Mahoning Mahoning	limestone shale limestone clay shale	1,735,585 93,073 ¹⁸ 18 18 18	1,735,585 93,073	Mg-608 Mg-EM ¹⁹	IM-4 IM-1056
Earth & Wood Landscape Supplies, Inc. 5335 Strausser St. North Canton, OH 44720 216-499-8309 Craig C. Snee, pres.	R. O. Snee (8) (454)	Stark	peat sand & gravel	18 18		Sk-242	IM-466

¹⁸No sales or production.¹⁹No mine number has been assigned by the Division of Mines.²⁰All sales and production are reported under Hmn-11.²¹See also Carl E. Oeder & Sons Sand & Gravel.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
East Ohio Limestone Co. P.O. Box 699 Hartsville, OH 44632 216-877-2636 Donald D. Phillips, pres.	East Ohio Limestone Co. (113) (52)	Stark	limestone clay	117,896 143	120,428 143	Sk-663	IM-5
Eberhart Coal, Inc. Rte. 2 Box 32 Dover, OH 44622-9507 216-343-5677 Phillip H. Eberhart, pres.	Eberhart #2 Hott Strip (78) (78) Eberhart #2 Hott Strip (84)	Tuscarawas Tuscarawas	clay shale clay	²² ²² ²²		Ts-1994 Ts-1998	IM-985 D-0735
R. A. Eberts Co., Inc. P.O. Box 191 Jackson, OH 45640 614-682-3506 Phil A. Bowman, pres.	Diamond Stone (9)	Athens	limestone	339,078	339,078	As-533	IM-17
Elm Spring Farm 938 State Rte. 207 Chillicothe, OH 45601 614-775-5525 Joanna J. Haskins, owner	Elm Spring Farm (297)	Ross	sand & gravel	3,300	3,300	Rs-26	IM-922
Envirosafe Services of Ohio, Inc. 876 Otter Creek Rd. Oregon, OH 43616 419-255-5100 Thomas C. Kovacik, pres.	Envirosafe Services of Ohio, Inc. (95)	Lucas	clay	²²		Ls-E ²³	IM-1075
M. T. Epling Co. 1725 Eastern Ave. Gallipolis, OH 45631 614-446-2742 M. T. Epling, pres.	Georges Creek Pit (105) M. T. Epling Sand & Gravel Plant (106)	Gallia Gallia	sand & gravel sand & gravel	²² 224	²² 224	Ga-243 Ga-245	IM-238
Erie Blacktop, Inc. P.O. Box 2308 Sandusky, OH 44870 419-625-7374 Dean Wikel, pres.	Erie Blacktop Quarry (24) Erie Blacktop Sand & Gravel Pit (417)	Erie Huron	limestone sand & gravel	215,434 31,976	289,583 22,206	Ee-27 Hrn-16	IM-608 IM-975
Erie Sand & Gravel Co. P.O. Box 153 Erie, PA 16512-0153 814-453-6721 Sidney E. Smith, Jr., pres.	Erie Sand & Gravel Co. (1)	Lake Erie	sand & gravel (dredged)	128,966	128,966	Ee-D ²³	
Ernst Material Service, Inc. 3361 Successful Way Dayton, OH 45414 513-878-1667 John Ernst, pres.	Ernst Material Service, Inc. (429)	Warren	sand & gravel	7,496	0	Wan-46	IM-679
Feikert Sand & Gravel, Inc. 6971 County Rd. 189 Millersburg, OH 44654-9186 216-674-0038 Lynn O. Feikert, pres.	Feikert Sand & Gravel, Inc. (154)	Holmes	sand & gravel	88,053	88,053	Hs-511	IM-345
Fenner Sand & Gravel, Inc. 7131 W. Fenner Rd. Ludlow Falls, OH 45339 513-698-7048 Robert P. Snead, pres.	Woodville Concrete Corp. (222)	Miami	sand & gravel	188,000	188,000	Mi-4	IM-472
Ferris Coal Co., Inc. 371 South St. East Palestine, OH 44413 216-426-9680 Theresa Ferris, pres.	Ferris Coal Co., Inc. (4) (4)	Columbiana	clay shale	56,381 ²²	56,381	Ca-505	IM-13
Fleckenstein Farm Gravel Pit 11251 State Rte. 66 Minster, OH 45865 513-295-2417 Ferd J. Fleckenstein, owner	Fleckenstein Farm Gravel Pit (310)	Shelby	sand & gravel	10,503	10,503	Shy-12	IM-528

²²No sales or production.²³No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Fleming Construction Co., Inc. P.O. Box 31 Marion, OH 43301-0031 614-494-2476 Gerald E. Fleming, pres.	Fleming Construction Co., Inc. (423)	Marion	sand & gravel	²⁴		Mn-F ²⁵	IM-990
Flesher Sand & Gravel, Inc. 3322 Clark Mill Rd. Norton, OH 44203 216-745-9239 James E. Flesher, pres.	Flesher Sand & Gravel, Inc. (327)	Summit	sand & gravel	30,105	30,105	St-52	IM-900
Foureman's Sand & Gravel, Inc. 2791 Wildcat Rd. Greenville, OH 45331 513-548-8626 Gary B. Foureman, pres.	Foureman's Sand & Gravel, Inc. (80)	Darke	sand & gravel	52,508	52,508	Dke-4	IM-433
The France Stone Co. 8130 Brint Rd. P.O. Box 278 Sylvania, OH 43560-0278 419-882-0123 Glenn E. Sherman, exec. v. pres.	Waterville (52) Sylvania (53) Paulding (86) Flat Rock (107) Bloomville (108) Custar (129)	Lucas Lucas Paulding Seneca Seneca Wood	limestone limestone limestone limestone limestone limestone	484,392 832,906 322,415 1,034,409 359,306 271,988	510,260 852,402 290,786 1,693,035 455,392 300,160	Ls-1 Ls-3 Pg-7 Sa-1 Sa-3 Wd-5	IM-575 IM-580 IM-347 IM-349 IM-473
Frye Sand & Gravel, Inc. 3049 S. Denmark Rd. P.O. Box 3 Dorset, OH 44032 216-858-2627 Harold L. Frye, owner	Frye Sand & Gravel, Inc. (9)	Ashtabula	sand & gravel	2,669	2,669	Asa-10	IM-198
G & M Supply, Inc. dba Clinton Stone, Inc. 1203 N. Pennsylvania Ave. P.O. Box 468 Wellston, OH 45692 614-384-5659 Bonny A. Huffman, pres.	Sands Hill (124)	Vinton	limestone	365,706	365,706	Vn-174	D-0309
Ganges Gravel 153 North Gambel St. P.O. Box 42 Shelby, OH 44875 419-342-5361 J. J. Scott, owner	Ganges Gravel (289)	Richland	sand & gravel	3,659	3,659	Rd-18	IM-670
John L. Garber Materials, Inc. Rte. 8 Lexington, OH 44904 419-884-1567 John L. Garber, pres.	John L. Garber Materials, Inc. (290)	Richland	sand & gravel	240,710	252,000	Rd-14	IM-436
General Clay Products Corp. P.O. Box 236 Baltic, OH 43804-0236 216-897-7171 Harold B. Epler, Jr., pres.	Drescher Pit (6) (6) Troyer Pit (18)	Coshocton Holmes	clay shale shale	²⁴ 3,850 16,169	 3,850 16,169	Cn-787 Hs-77	IM-610 IM-545
General Clay Products Corp. P.O. Box 550 Logan, OH 43138 614-385-5616 Harold B. Epler, Jr., pres.	General Clay Products Corp. (12) (12) General Clay Products Corp. (110)	Hocking Hocking	clay shale shale	26,958 15,028 9,000	26,958 15,028 9,000	Hg-205 Hg-G ²⁵	IM-21 IM-1013
General Clay Products Corp. P.O. Box 340 Wadsworth, OH 44281 216-335-1515 Harold B. Epler, Jr., pres.	General Clay Products Corp. (37)	Medina	shale	47,847	47,847	Ma-6	IM-455
GenLime Group, L.P. P.O. Box 158 Genoa, OH 43430 419-855-8336 Paul F. Gnepper, dir. admin.	GenLime Group, L.P. (85)	Ottawa	limestone	405,565	327,379	Oa-1	IM-292

²⁴No sales or production.²⁵No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Gerken Materials, Inc. P.O. Box 607 Napoleon, OH 43545 419-533-2421 Julian A. Gerken, pres.	Gerken Materials, Inc. (147)	Henry	sand & gravel	90,380	90,380	Hy-5	
Gibson Sand & Gravel Co. 1385 Knorr Rd. Galion, OH 44833 419-468-5527 Arthur T. Gibson, owner	Gibson Sand & Gravel Co. (75)	Crawford	sand & gravel	760	760	Cd-3	IM-693
Glen-Gery Corp. P.O. Box 207 Iberia, OH 43325 419-468-5002 Evan Davis, mgr.	Glen-Gery Corp. (36)	Marion	shale	194,920	194,920	Mn-7	IM-309
Goodwin Sand & Gravel, Inc. 126 S. Norton St. Mt. Vernon, OH 43050 614-392-7971 Don E. Mill, pres.	Goodwin Sand & Gravel, Inc. (160)	Knox	sand & gravel	73,878	83,065	Kx-7	IM-235
Gottron Bros. Co. 100 South Stone St. Fremont, OH 43420 419-332-5281 Harry P. Gottron, Jr., v. pres.	Gottron Bros. Co. (101)	Sandusky	limestone	97,470	95,079	Sy-5	IM-259
The Gravel Co. 325 Clark Rd. P.O. Box 15501 Cincinnati, OH 45215 513-761-4980 Roy B. Schweitzer, pres.	Great Miami River deposits (141)	Hamilton	sand & gravel	²⁶		Hmn-28	IM-353
The Gravel Co. 151 Seven Mile Ave. New Miami, OH 45011 513-761-4980 Roy B. Schweitzer, pres.	New Miami Pit (42)	Butler	sand & gravel	62,621	62,621	Br-3	IM-719
Green Basin Coal, Inc. Rte. 1 Box 49C Strasburg, OH 44680 216-343-5231 Tim Williams, pres.	Green Basin Coal, Inc. (169) (103)	Tuscarawas	limestone clay	²⁶ ²⁶		Ts-2024	IM-1087
Green Oaks Potting Products 2222 Lake Rockwell Rd. Ravenna, OH 44266 216-296-2157 Roy Huffman, pres.	Green Oaks Potting Products (7) (451)	Portage	peat sand & gravel	12,000 4,000	12,000 4,000	Pe-89	
Gregory Materials Co. 14133 U.S. Rte. 23 N Waverly, OH 45690 614-947-5559 Ernest Gregory, owner	Plant #1 (254)	Pike	sand & gravel	²⁶		Pke-30	IM-786
Gregory Stone Co., Inc. 3244 S. Davis Rd. Ludlow Falls, OH 45339 513-275-7455 William T. Gregory, Jr., pres.	Gregory Quarry (65)	Miami	limestone	3,148	3,148	Mi-16	IM-414
H. T. Griffin Excavating, Inc. Route 5 Box 217 Swanton, OH 43558 419-826-0230 Henry T. Griffin, owner	H. T. Griffin Excavating, Inc. (472)	Lucas	sand & gravel	²⁶		Ls-G ²⁷	IM-1090
Gwin Contracting Co. P.O. Box 205 Columbiana, OH 44408 216-482-2442 Lyle D. Gwin, pres.	Gwin Contracting Co. (30)	Mahoning	sandstone	33,398	33,398	Mg-62	IM-599

²⁶No sales or production.²⁷No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
H & H Utilities Co. 7307 S. Kessler-Frederick Rd. West Milton, OH 45383 513-223-6752 Gerald Hochwalt, pres.	H & H Gravel (229)	Montgomery	sand & gravel	110,627	110,627	My-68	IM-646
J. M. Hamilton & Sons Co., Inc. 1974 Marion-Bucyrus Rd. Marion, OH 43302 614-382-2189 O. E. Hamilton, pres.	J. M. Hamilton & Sons Co., Inc. (59)	Marion	limestone	114,651	114,651	Mn-2	IM-423
Hard Rocks, Inc. 9340 State Rte. 5 NE Kinsman, OH 44428 216-876-1565 Daniel White, pres.	Hard Rocks, Inc. (40)	Trumbull	sandstone	23,955	31,680	Tl-13	IM-777
Hardin Quarry Co., Inc. 12484 State Rte. 701 Kenton, OH 43326 419-675-1327 Richard Pees, pres.	Hardin Quarry Co., Inc. (38)	Hardin	limestone	188,454	188,454	Hdn-2	IM-443
Harrison Sand & Gravel Co. 10980 Campbell Rd. Harrison, OH 45030 513-637-5174 Donald Gauck, v. pres.	Harrison Sand & Gravel Co. (135)	Hamilton	sand & gravel	92,168	79,670	Hmn-17	IM-295
Haubeil & Sons Asphalt & Materials, Inc. 691 Marietta Pike Chillicothe, OH 45601 614-773-6358 Robert & George Haubeil, co-owners	Haubeil & Sons Asphalt & Materials, Inc. (298)	Ross	sand & gravel	31,363	31,363	Rs-24	IM-735
	Haubeil & Sons Asphalt & Materials, Inc. (491)	Ross	sand & gravel	²⁸		Rs-H ²⁹	IM-1052
Haueter Sand & Gravel, Inc. P.O. Box 206 Chardon, OH 44024 216-286-9482 Donald H. Haueter, pres.	Haueter Sand & Gravel, Inc. (108)	Geauga	sand & gravel	159,946	159,946	Gea-29	IM-215
Heiser Sand & Gravel P.O. Box 2491 North Canton, OH 44720 216-499-8201 Richard L. Heiser, owner	Heiser Sand & Gravel (323)	Stark	sand & gravel	6,538	6,538	Sk-688	IM-763
	Heiser Stone Co. (397)	Tuscarawas	sand & gravel	²⁸		Ts-1977	IM-692
Hillcrest Coal, Ltd. 190 S. Main St. Magnolia, OH 44643 216-866-9388 Kermit & Richard James, Jr., partners	Hillcrest Coal, Ltd. (102)	Stark	clay	18,642	18,642	Sk-HC ²⁹	IM-1037
Hillsdale Sand & Gravel, Inc. P.O. Box 223 Archbold, OH 43502 419-445-1015 Dean Miller, pres.	Hillsdale Sand & Gravel, Inc. (82)	Defiance	sand & gravel	15,843	0	De-2	IM-765
	Hilltop Aggregate, Inc. (262)	Portage	sand & gravel	386,505	386,505	Pe-56	IM-127
Hilltop Basic Resources, Inc. 630 Vine St. Cincinnati, OH 45202 513-878-8631 Thomas D. Harrington, pres.	Fairborn Aggregate Plant (112) West Carrollton Aggregate Plant (232)	Clark, Greene Montgomery	sand & gravel sand & gravel	438,864 458,603	560,273 591,612	Ge-4 My-19	IM-394 IM-401

²⁸No sales or production.²⁹No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Hilltop Basic Resources, Inc. dba Enon Washed Sand & Gravel Co. 1665 Enon-Donnelsville Rd. P.O. Box 363 Enon, OH 45323 513-299-6058 Thomas D. Harrington, pres.	Enon Washed Sand & Gravel Co. (57)	Clark	sand & gravel	194,894	180,128	Ck-3	IM-463
Hocking County Engineer 1286 California Ave. Logan, OH 43138-8999 614-385-8543 Douglas A. Neff, admin. asst.	Hocking County Gravel Pit (150)	Hocking	sand & gravel	³⁰		Hg-296	IM-559
Hocking Valley Concrete, Inc. 35255 Hocking Dr. Logan, OH 43138 614-385-2165 William G. Vaughn, pres.	Hocking Valley Concrete, Inc. (151)	Hocking	sand & gravel	50,300	56,800	Hg-262	IM-41
William A. Hoffman, Jr. 25043 State Rte. 104 Circleville, OH 43113 614-474-2002 William A. Hoffman, Jr., owner	Hoffman Pit (480)	Pickaway	sand & gravel	3,200	3,200	Pky-H ³¹	IM-1039
Tom Hollinger Excavating 2097 Hollansburg-Arcanum Rd. New Madison, OH 45346 513-996-5381 Thomas W. Hollinger, leasee	Hollinger Gravel Plant (81)	Darke	sand & gravel	722	722	Dke-10	IM-326
Holmes Limestone Co. P.O. Box 295 Berlin, OH 44610 216-893-2721 Merle Mullet, pres.	241 Plant (44) (19) Wayne Mines (45)	Holmes	limestone clay	87,240 12,611	87,240 12,611	Hs-67	IM-768
	Holmes Limestone Co. (157) Bolivar Mine (76)	Holmes, Wayne Holmes Stark	limestone clay	206,750 ³⁰ 18,586	206,750 18,586	Hs-79 ³² Hs-H ³¹ Sk-235	IM-656 IM-1104 IM-945
Honey Creek Stone Co. P.O. Box 286 Petersburg, OH 44454 216-542-2372 Leo Verzilli, plant foreman	Honey Creek Stone Co. (56)	Mahoning	limestone	234,031	236,940	Mg-54	IM-93
Huck Farms 1162 S. Riverside Dr. McConnelsville, OH 43756 614-962-3467 Louis & Cecil Huck, partners	Huck Farms (241)	Morgan	sand & gravel	100	100	Mon-599	
Hugo Sand Co. 7055 State Rte. 43 Kent, OH 44240 216-587-2700 Dorothy M. Stroh, pres.	Hugo Sand Co. (264)	Portage	sand & gravel	246,935	246,935	Pe-10	IM-138
Humphrey Farms P.O. Box 128 Reedsville, OH 45772-0128 614-378-6295 C. Ed Humphrey, owner	Vivian Humphrey (210)	Meigs	sand & gravel	1,482	1,482	Ms-295	
Hydraulic Press Brick Co. 8900 Hemlock Rd. P.O. Box 31330 Independence, OH 44131 314-621-9306 W. W. Allen, Jr., pres.	Hydraulic Press Brick Co. (7)	Cuyahoga	shale	234,832	233,597	Cya-19	IM-95
Indian Creek Sand & Gravel Co. P.O. Box 330 Oxford, OH 45056 513-523-8805 Gaston Bowling, pres.	Indian Creek Sand & Gravel Co. (37)	Butler	sand & gravel	5,669	5,669	Br-40	IM-493

³⁰No sales or production.³¹No mine number has been assigned by the Division of Mines.³²All sales and production are from Wayne County.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
J. P. Sand & Gravel Co. 5911 Lockbourne Rd. P.O. Box 2 Lockbourne, OH 43137 614-497-0083 Richard A. Roberts, pres.	J. P. Sand & Gravel Co. (98)	Franklin	sand & gravel	430,921	430,921	Fn-52	IM-191
Janson Soil Service, Inc. 1492 Mechanicsville Rd. Rock Creek, OH 44084 216-466-3835 Peter E. Janson, Jr., pres.	Janson Soil Service, Inc. (10) (82)	Ashtabula	sand & gravel shale	³³ 180	180	Asa-14	IM-563
Jarrett Sand Co. 6505 Skadden Rd. Sandusky, OH 44870 419-359-1750 James Jarrett, owner	Jarrett Sand Co. (84)	Erie	sand & gravel	6,104	6,104	Ee-29	
Jefferson Materials Co. 8505 State Rte. 14 Streetsboro, OH 44241 216-626-3816 John E. Lower, pres.	Howitt (265)	Portage	sand & gravel	249,633	247,290	Pe-63	IM-82
Johnson Rd. Sand & Gravel P.O. Box 971 Kent, OH 44240 216-673-3396 Robert K. Heimann, pres.	Johnson Rd. Sand & Gravel (484)	Portage	sand & gravel	³³		Pe-J ³⁴	IM-1099
Jones Sand & Gravel Co. 1516 Timken Rd. Wooster, OH 44691 216-264-1070 Gerald R. Jones, pres.	Jones Sand & Gravel Co. (470)	Holmes	sand & gravel	11,000	11,000	Hs-J ³⁴	IM-1043
Joseph Sand & Gravel Rte. 6 Boundary Rd. Wapakoneta, OH 45895 419-568-3787 Mary J. Joseph, owner	Joseph Sand & Gravel (23)	Auglaize	sand & gravel	8,789	8,789	Ae-23	IM-508
Karg Sand & Gravel Co. 2088 Congress Lake Rd. Mogadore, OH 44260 216-673-1338 Thomas R. Karg, owner	Karg Sand & Gravel Co. (266)	Portage	sand & gravel	11,200	11,200	Pe-83	IM-179
Keener Sand & Clay Co. 330 Dering Ave. Columbus, OH 43207 614-444-1105 Carl F. Weiffenbach, pres.	Huron Plant (85) Gallia Plant (107)	Erie Gallia	sand & gravel sand & gravel	1,651 279	1,651 279	Ee-5 Ga-507 ³⁵	IM-23
Kelly Coal Co. P.O. Box 89 Elkton, OH 44415 216-424-9654 Glenn O. Kelly, pres.	Kelly Coal Co. (463)	Columbiana	sand & gravel	³³		Ca-K ³⁴	IM-1108
Kimble Clay & Limestone Co. Rte. 1 Box 386 Dover, OH 44622 216-343-1226 Floyd E. Kimble, owner	Kimble Clay & Limestone Co. (117) (41) (63) (63)	Tuscarawas	limestone sandstone clay shale	92,165 6,633 306,865 333,611	92,165 6,633 306,865 333,611	Ts-1818	IM-9
King Limestone, Inc. 53681 Spencer Rd. Cumberland, OH 43732 614-638-3942 Duane King, pres.	King Limestone, Inc. (147) King Limestone, Inc. (79)	Guernsey, Muskingum Noble	limestone limestone	190,158 ³³	190,158	Gy-309 Ne-106	IM-1030 IM-85
Kinsman Sand & Gravel Co. P.O. Box B Kinsman, OH 44428 216-293-5400 Glenn B. Harnett, pres.	Kinsman Sand & Gravel Co. (11)	Ashtabula	sand & gravel	147,374	145,550	Asa-17	IM-886

³³No sales or production.³⁴No mine number has been assigned by the Division of Mines.³⁵This mine number has been duplicated by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Kipp's Gravel Co., Inc. 4987 State Rte. 222 Batavia, OH 45103 513-732-1024 Melvin M. Kipp, pres.	Kipp's Gravel Co., Inc. (61)	Clermont	sand & gravel	115,814	115,814	Ct-7	IM-432
Kirby's Sand & Gravel, Inc. 4876 County Hwy. 43 Upper Sandusky, OH 43351 419-927-2260 Noble A. Kirby, owner	Kirby's Sand & Gravel, Inc. (382)	Wyandot	sand & gravel	42,347	42,347	Wt-17	IM-604
Charles Kishler P.O. Box 5275 Junction City, OH 43748 614-385-5371 Charles L. Kishler, owner	Kishler Coal & Clay Co. (45) (45)	Perry	clay shale	³⁶ ³⁶		Py-297	IM-850
Kleese Development Associates, Inc. 45 North Rd. Niles, OH 44446 216-652-5991 Robert Kleese, pres.	Kleese Development Associates, Inc., (499)	Trumbull	sand & gravel	³⁶		Tl-K ³⁷	IM-1101
Kosmos Cement Co. 15301 Dixie Highway P.O. Box 72319 Louisville, KY 40272 502-935-7331 K. R. Blakely, controller	Bear Run (30)	Lawrence	shale	³⁶		Le-308	IM-31
Edward Kraemer & Sons, Inc. Bolander Rd. Clay Center, OH 43408 419-855-8388 David R. Kraemer, pres.	White Rock Quarry (82)	Ottawa	limestone	1,258,400	1,147,014	Oa-6	IM-296
L & I Natural Resources, Inc. 1842 Adams Rd. Loveland, OH 45140 513-683-2045 Alvin Walker, pres.	L & I Natural Resources, Inc. (430)	Warren	sand & gravel	238,542	238,542	Wan-50	IM-1006
L & I Trucking & Construction, Inc. 1842 Adams Rd. Loveland, OH 45140 513-683-2045 Alvin Walker, pres.	L & I Trucking & Construction, Inc. (357)	Warren	sand & gravel	177,553	177,553	Wan-8	IM-240
L. & M. Excavators, Inc. 6075 Cleveland Ave. #205 Columbus, OH 43231 614-895-1056 Charles L. Lewis, pres.	Westerville Industrial Park (99)	Franklin	sand & gravel	10,740	10,740	Fn-54	IM-847
L & M Mineral Co. Star Rte. P.O. Box 54 Millersburg, OH 44654 216-893-2227 E. E. Mullet, pres.	Evans (64) Luikert (65) Holmes (66) Spring (77) (77)	Tuscarawas Tuscarawas Tuscarawas Tuscarawas	shale clay shale clay shale	7,157 7,310 40,050 26,875 3,650	7,157 7,310 40,050 26,875 3,650	Ts-1884 Ts-1914 Ts-1981 Ts-1982	IM-6 D-0701 IM-741 IM-621
Lafarge Corp. Great Lakes Region P.O. Box 160 Paulding, OH 45879 419-399-4861 Robert W. Murdoch, pres.	Paulding Quarry (87) (42)	Paulding	limestone clay	674,185 182,530	674,185 182,530	Pg-1	IM-513
Lake Hope Asphalt, Inc. P.O. Box 38 Nelsonville, OH 45764 614-753-1005 Francis Efaw, pres.	Lake Hope Asphalt, Inc. (21)	Athens	sand & gravel	16,461	35,016	As-1161	IM-97
Lakeland Construction 65105 Old Rte. 800 Barnesville, OH 43713 614-425-1816 Tim Hall, mgr.	Lakeland Construction (151)	Belmont	limestone	³⁶		Bt-L ³⁷	IM-1093

³⁶No sales or production.³⁷No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Lakeside Sand & Gravel Co. 3431 Frost Rd. Mantua, OH 44255-9444 216-274-2569 Larry Kotkowski, partner	Lakeside Sand & Gravel Co. (268)	Portage	sand & gravel	267,129	249,547	Pe-40	IM-190
Lancaster Sand & Gravel Co. 3232 Logan-Lancaster Rd. SE Lancaster, OH 43130 614-246-6315 Don E. Mill, pres.	Lancaster Sand & Gravel Co. (92)	Fairfield	sand & gravel	375,149	329,277	Fd-13	IM-848
Latham Limestone, Inc. P.O. Box 77 Latham, OH 45646 614-493-2677 Robert Murray, pres.	Latham Limestone, Inc. (91)	Pike	limestone	268,357	256,542	Pke-13	IM-213
Lazy Acre Farms, Inc. 1030 Forest Ave. Zanesville, OH 43701 614-453-1003 Clarence M. Parsons, owner	Lazy Acre Farms, Inc. (396)	Muskingum	sand & gravel	31,257	31,257	Mum-261	IM-957
Lerkis Asphalt Co., Inc. 550 Dan St. Akron, OH 44310 216-376-7560 Gus J. Lerakis, pres.	Minor Rd. Plant (328) Lerkis Sand & Gravel Co. (498)	Summit Summit	sand & gravel sand & gravel	³⁸ ³⁸		St-39 St-L ³⁹	IM-983 IM-1027
Carroll Lifer Excavating, Inc. P.O. Box 308 Bellville, OH 44813 419-886-2540 Carroll D. Lifer, pres.	Carroll Lifer Excavating, Inc. (489)	Richland	sand & gravel	³⁸		Rd-L ³⁹	IM-1086
Lingvai Peat Co. R.R. 2 01693 Rd. 8 Edgerton, OH 43517 419-298-2058 Ronald Lingvai, mgr.	Lingvai Peat Co. (4)	Williams	peat	52	160	Ws-17	
London Tile Co. 65 Walnut St. New London, OH 44851 419-929-1551 R. N. Danison, pres.	Biglow (1)	Ashland	shale	1,150	1,150	Ald-1	IM-334
Loxley Aggregates, Inc. 4277 Falls Rd. Lewisburg, OH 45338 513-839-4874 Matthew L. Loxley, pres.	Loxley Aggregates, Inc. (488) (101)	Preble	sand & gravel clay	³⁸ ³⁸		Pre-9	IM-1095
Luburgh, Inc. 4090 East Pike Zanesville, OH 43701 614-453-9003 Otto Luburgh, owner	Luburgh, Inc. Sand Pit (410)	Muskingum	sand & gravel	51,200	105,700	Mum-267	IM-914
Ludowici-Celadon Co. P.O. Box 69 New Lexington, OH 43764 614-342-1995 Edward Ryser, pres.	Donnelly Pit (46)	Perry	shale	³⁸		Py-212	IM-58
M. & G. Supply Co. 7522 Wales Rd. North Canton, OH 44720 216-499-8473 Gary R. Ross, pres.	Chapel Hill Sand & Gravel (497)	Summit	sand & gravel	79,029	79,029	St-56	IM-1073
M & M Builders Supply Co. 5820 Carbon Hill Rd. East Palestine, OH 44413 216-426-9958 Hugh Madden, owner	M & M Builders Supply Co. (47) (106) (106)	Columbiana	sandstone clay shale	³⁸ ³⁸ ³⁸		Ca-970	IM-1024

³⁸No sales or production.³⁹No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
MacRitchie Materials, Inc. P.O. Box 90 West Millgrove, OH 43467 419-288-2790 Donald B. MacRitchie, pres.	MacRitchie Materials, Inc. (130)	Wood	limestone	157,679	157,679	Wd-1	IM-548
Maple Grove Stone Co. P.O. Box 456 Tiffin, OH 44883 419-992-4235 Tim Bell, pres.	Maple Grove (106)	Seneca	limestone	104,544	104,544	Sa-2	IM-352
Marshall Quarry, Inc. 11199 State Rte. 124 Hillsboro, OH 45133 513-466-2636 Ronald M. Main, pres.	Marshall Quarry, Inc. (43)	Highland	limestone	4,026	4,026	Hd-4	IM-406
Donald Martin Contracting 1875 Roxanna-New Burlington Rd. Waynesville, OH 45068 513-862-4182 Roger J. Martin, operator	Donald Martin Contracting (403)	Greene	sand & gravel	138	138	Ge-40	IM-923
Martin Marietta Magnesia Specialties, Inc. Executive Plaza II Hunt Valley, MD 21030 301-667-0200 W. W. Appel, pres.	Woodville Quarry (102)	Sandusky	limestone	1,711,001	1,711,001	Sy-1	IM-537
Mason's Sand & Gravel Co. 2385 Rathmell Rd. Columbus, OH 43207 614-491-3611 Gordon Masteller, pres.	Mason's Sand & Gravel Co. (100)	Franklin	sand & gravel	24,639	24,639	Fn-11	IM-234
Massillon Materials, Inc. 26 N. Cochran St. P.O. Box 499 Dalton, OH 44618 216-837-4767 Howard J. Wenger, pres.	Massillon Materials, Inc. (495)	Stark	sand & gravel	5,800	5,800	Sk-M ⁴⁰	IM-1031
Massillon Washed Gravel Co. 6331 Blough Ave. SW P.O. Box 167 Navarre, OH 44662 216-879-2132 Thomas E. Thomas, pres.	Massillon Washed Gravel Co. (325)	Stark	sand & gravel	246,136	246,136	Sk-607	IM-102
Maumee Haulers & Excavating, Inc. P.O. Box 107 Monclova, OH 43542 419-866-0400 Ike Parker, Jr., pres.	Eber Rd. Pit (422)	Lucas	sand & gravel	117,434	117,434	Ls-26	IM-1016
Maxville Quarries, Inc. 7957 State Rte. 668 S Logan, OH 43138 614-385-7087 David J. McCort, pres.	Maxville Quarries, Inc. (89) Maxville Quarries, Inc. (168)	Perry Perry	limestone limestone	199,306 22,600	178,727 17,328	Py-235 Py-343	IM-11, IM-515 IM-1061
McCarthy Stone Quarry 6326 County Rd. 61 Upper Sandusky, OH 43351 419-294-2611 Charles H. McCarthy, owner	McCarthy Stone Quarry (133)	Wyandot	limestone	109,286	109,286	Wt-3	IM-298
Mead Corp. 401 S. Paint St. P.O. Box 2500 Chillicothe, OH 45601 614-772-3111 John C. Bogle, pres.	Mead Corp. (115)	Ross	clay	200,000	200,000	Rs-M ⁴⁰	IM-1055

⁴⁰No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Mecco, Inc. 2504 S. Main St. Middletown, OH 45042 513-422-3651 David T. Morgan, pres.	Mecco, Inc. (39)	Butler	sand & gravel	208,114	242,020	Br-15	IM-316
Mechanicsburg Sand & Gravel, Inc. P.O. Box 18 Mechanicsburg, OH 43044 513-834-2606 John D. Cushman, pres.	Mechanicsburg Sand & Gravel, Inc. (50)	Champaign	sand & gravel	107,176	94,656	Cpn-22	IM-889
Meigs County Commissioners Rte. 2 Rocksprings Rd. Pomeroy, OH 45769 614-992-2911 David H. Spencer, office mgr.	Meigs County Pit (211)	Meigs	sand & gravel	8,640	8,640	Ms-301	IM-619
Melvin Stone Co. 228 Melvin Rd. Wilmington, OH 45177 513-584-2486 Craig Beam, pres.	Melvin Stone Co. (17) Limestone, Inc. (28) Limestone, Inc. (92)	Clinton Fayette Pickaway	limestone limestone limestone	715,698 125,769 217,037	715,698 125,769 217,037	Cln-1 Fe-1 Pky-4	IM-241 IM-831 IM-209
Menuez Bros. Sand & Gravel, Inc. 5366 County Rd. 349 Rte. 1 Millersburg, OH 44654 216-674-4254 Gene Menuez, pres.	Fair Pit (153)	Holmes	sand & gravel	115,538	115,538	Hs-82	IM-707
Mesenburg Bros., Inc. R.D. 1 Collins, OH 44826 419-668-5691 Peter J. Mesenburg, pres.	Mesenburg Bros., Inc. (86) Mesenburg Bros., Inc. (20)	Erie Huron	sand & gravel sandstone	8,834 7,532	8,834 7,532	Ee-24 Hrn-8	IM-915 IM-268
Miami River Stone Co. 1556 Miami River Rd. Sidney, OH 45365 513-492-5412 Bradley Comer, pres.	Miami River Stone Co. (110) Miami River Stone Co. (311)	Shelby Shelby	limestone sand & gravel	335,526 ⁴¹	320,522	Shy-6 Shy-17	IM-389 IM-389
Mickley Gravel Co. P.O. Box J Danville, OH 43014 614-599-7870 Paul A. Mickley, owner	Mickley Gravel Co. (162)	Knox	sand & gravel	2,204	168	Kx-5	IM-884
Miller Bros. Gravel, Inc. 7900 S. Kessler-Frederick Rd. Tipp City, OH 45371 513-698-7204 Thomas O. Miller, pres.	Miller Bros. Gravel, Inc. (233)	Montgomery	sand & gravel	245,047	229,440	My-52	IM-348
H. M. Miller Construction Co. P.O. Box 131 Mogadore, OH 44260 216-628-4811 J. C. Smith, pres.	Krumroy Pit (330)	Summit	sand & gravel	⁴¹		St-46	IM-557
Miller Sand & Gravel Co. State Rte. 82 Box 60 Windham, OH 44288 216-326-3157 Donald M. Miller, owner	Miller Sand & Gravel Co. (272)	Portage	sand & gravel	2,620	1,498	Pe-39	IM-174
Miller Sand Co. 5003 Bellevue-Castalia Rd. Castalia, OH 44824 419-684-7328 Todd C. Miller, owner	Miller Sand Co. (87)	Erie	sand & gravel	4,378	4,378	Ee-28	IM-601
Mitchell Transport, Inc. 35746 Lake Shore Blvd. Eastlake, OH 44094 216-942-9191 Robert Amos, pres.	Mitchell Transport, Inc. (92)	Lake	clay	32,000	32,000	Lke-M ⁴²	IM-1059

⁴¹No sales or production.⁴²No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Mohican Organic Products, Inc. Rte. 1, 47 Milligan Rd. Lucas, OH 44843 419-892-2212 Farley & Joyce Amos, owners	Mohican Pit (1)	Ashland	peat	⁴³		Ald-13	
Moore's Excavating Co. 2222 N. State Rte. 68 Urbana, OH 43078 513-653-6288 Ralph Moore, owner	Moore's Excavating Co. (51)	Champaign	sand & gravel	91,844	80,151	Cpn-20	IM-482
Morrow Gravel Co. 11641 Mosteller Rd. Cincinnati, OH 45241 513-771-0820 James P. Jurgensen, pres.	Morrow Gravel Co. (501) Morrow Gravel Co. (502) Morrow Gravel Co. (503)	Warren Warren Warren	sand & gravel sand & gravel sand & gravel	300,000 ⁴³ 63,231	300,000 63,231	Wan-M ⁴⁴ Wan-M1 ⁴⁴ Wan-M2 ⁴⁴	IM-728, IM-1065 IM-1051 IM-837
Morton International, Inc. Morton Salt Division P.O. Box 428 Grand River, OH 44045-0428 216-639-4243 Paul Blair, facility mgr.	Fairport Mine (2)	Lake	salt	1,405,905	1,551,000	Lke-6	
Morton International, Inc. Morton Salt Division 151 S. Industrial St. P.O. Box 337 Rittman, OH 44270-1593 216-925-3015 Charles S. Locke, CEO	Morton Salt Well Field (5)	Wayne	salt	470,055	482,528	We-9129	
Muskingum River Gravel Co. P.O. Box 1585 Zanesville, OH 43702-1585 614-453-0624 Larry E. Young, v. pres.	Muskingum River Gravel Co. (152) Muskingum River Gravel Co. (247) Muskingum River Gravel Co. (448) Plant #1 (245) Muskingum River Gravel Co. (452) Plant #2 (367)	Hocking Muskingum Muskingum Muskingum Ross Washington	sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel	85,000 100,000 ⁴³ ⁴³ 200,000 12,750	85,000 100,000 200,000 12,750	Hg-301 Mum-228 Mum-262 Mum-736 Rs-M ⁴⁴ Wn-38	IM-458 IM-421 IM-422 IM-804 IM-114 IM-701
National Lime & Stone Co. P.O. Box 120 Findlay, OH 45839-0120 419-422-4341 R. W. Kruse, v. pres.	Lima Plant (4) Lima Plant (5) Lima Plant (6) Buckland Plant (11) Wapakoneta Plant (24) Bucyrus Plant (18) Delaware Plant (21) Findlay Plant (35) Findlay Plant (149) Marion Plant (60) Carey Plant (134) Upper Sandusky Plant (380) Upper Sandusky Plant (380) Upper Sandusky Plant (381)	Allen Allen Allen Auglaize Auglaize Crawford Delaware Hancock Hancock Marion Wyandot Wyandot Wyandot Wyandot	limestone limestone limestone limestone sand & gravel limestone limestone limestone limestone limestone limestone sand & gravel sand & gravel sand & gravel	⁴⁵ 1,010,323 ⁴⁵ 296,328 272,028 1,271,069 1,703,277 ⁴³ 1,057,637 575,434 2,538,090 ⁴⁶ 189,326 ⁴⁶	 926,000 305,000 268,000 1,349,000 1,501,000 1,176,000 633,000 2,522,300 207,000	An-2 An-3 An-11 Ae-10 Ae-30 Cd-1 Del-5 Hk-1 Hk-7 Mn-3 Wt-1 Wt-5 Wt-15 Wt-18	IM-540 IM-484 IM-541 IM-486 IM-598 IM-404 IM-207 IM-483 IM-1002 IM-168 IM-405 IM-376 IM-376 IM-551
Neer's Sand & Gravel 4859 Twp. Rd. 45 Bellefontaine, OH 43311 513-585-6733 Arden J. Neer, Sr., owner	Neer's Sand & Gravel (189)	Logan	sand & gravel	133,455	172,068	Lgn-6	IM-459
Nelson Sand & Gravel, Inc. P.O. Box 31 Kingsville, OH 44048 216-224-0198 Thomas H. Nelson, pres.	Nelson Sand & Gravel, Inc. (14)	Ashtabula	sand & gravel	11,300	11,300	Asa-12	IM-911
Newark Asphalt Co. 2699 State Rte. 37 Alexandria, OH 43001 614-366-2302 Frank B. Murphy, pres.	Alexandria Pit (173)	Licking	sand & gravel	87,948	98,859	Lg-8	IM-271
New Carlisle Sand & Gravel Co. 6090 S. Scarff Rd. New Carlisle, OH 45344 513-845-0696 Willard Lee Upton, owner	New Carlisle Sand & Gravel Co. (217)	Miami	sand & gravel	438	438	Mi-501	

⁴³No sales or production.⁴⁴No mine number has been assigned by the Division of Mines.⁴⁵All sales and production are reported under An-3.⁴⁶All sales and production are reported under Wt-15.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Newton Asphalt P.O. Box 86 Strasburg, OH 44680 216-878-5648 G. A. Gessner & C. T. Newton, partners	516 (428)	Tuscarawas	sand & gravel	89,396	89,396	Ts-2001	IM-1004
Northern Ohio Materials, Inc. 8300 State Rte. 14 Streetsboro, OH 44241 216-626-5577 Roger Schuck, operations mgr.	Northern Ohio Materials, Inc. (273)	Portage	sand & gravel	375,902	375,902	Pe-85	IM-700
Northern Ohio Paving Co. 1750 Highland Rd. Twinsburg, OH 44087 216-425-7861 Walter H. Edwards, pres.	Northern Ohio Paving Co. (316)	Stark	sand & gravel	255,916	255,916	Sk-N ⁴⁷	IM-156
Northmont Sand & Gravel Co. P.O. Box 185 Englewood, OH 45322 513-836-1998 Robert D. Eyre, pres.	Northmont Sand & Gravel Co. (235)	Montgomery	sand & gravel	42,498	23,522	My-49	IM-370
North Ridge Materials 3052 E. Center St. P.O. Box 599 North Kingsville, OH 44068 216-224-1009 Joseph E. Simak, pres.	North Ridge Materials (413)	Ashtabula	sand & gravel	55,120	55,120	Asa-18	IM-949
North Shore Stone Quarries, Inc. 72 Fernhill Ave. Columbus, OH 43228 614-878-3628 Clifford Hammond, pres.	North Shore Stone Quarries, Inc. (109)	Seneca	limestone	8,211	8,211	Sa-8	IM-313
Northwood Stone & Asphalt Co. 1558 County Rd. 105 Belle Center, OH 43310 513-464-3833 Don E. Mill, pres.	Northwood Stone & Asphalt Co. (51) Rockhold Division (119)	Logan Union	limestone limestone	159,486 61,275	204,150 92,700	Lgn-2 Un-1 ⁴⁸	IM-494 IM-208
Nutter Bros. Coal Co., Inc. P.O. Box 248 New Straitsville, OH 43766 614-394-2681 James P. Nutter, pres.	Nutter Bros. Coal Co., Inc. (83) Nutter Bros. Coal Co., Inc. (98)	Perry Perry	clay clay	50,690 ⁴⁹	50,690	Py-336 Py-N ⁴⁷	IM-1040 IM-1097
Carl E. Oeder & Sons Sand & Gravel 3890 Turtlecreek Rd. Lebanon, OH 45036 513-494-1238 Carl E. Oeder, pres.	Carl E. Oeder & Sons Sand & Gravel (352) Stubbsmill #2 (431)	Warren Warren	sand & gravel sand & gravel	239,919 166,909	239,919 166,909	Wan-41 ⁵⁰ Wan-52	IM-629 IM-994
Ohio Asphaltic Limestone Corp. 8591 Mad River Rd. Hillsboro, OH 45133 513-364-2191 W. C. Mason, pres.	Ohio Asphaltic Limestone Corp. (42)	Highland	limestone	267,108	261,000	Hd-3	IM-253
Ohio Coal & Construction Corp. P.O. Box 2388 Wintersville, OH 43952 614-264-7704 Richard Delatore, pres.	Ohio Coal & Construction Corp. (150)	Belmont	limestone	⁴⁹		Bt-1126	IM-802
Olen Corp. 4755 S. High St. Columbus, OH 43207-4028 614-491-1515 Wayne Rayburn, pres.	Hilliard Plant (102) (154) Columbus Plant (465) Fredericktown Plant (161)	Franklin Franklin Knox	sand & gravel limestone sand & gravel sand & gravel	306,072 334,500 998,411 280,067	306,072 334,500 998,411 280,067	Fn-43 Fn-58 Kx-16	IM-188 IM-1023 IM-793

⁴⁷No mine number has been assigned by the Division of Mines.⁴⁸This mine was operated 1st and 2nd quarters 1990 by L. G. Rockhold & Sons, Inc., and 3rd and 4th quarters by Northwood Stone and Asphalt Co.⁴⁹No sales or production.⁵⁰See also Dravo Basic Materials Co., Inc.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Oneida Sand & Gravel, Inc. 8000 Blade Rd. NW Malvern, OH 44644 216-343-6831 Louis H. Smitley, pres.	Oneida Sand & Gravel, Inc. (47)	Carroll	sand & gravel	91,296	71,468	Cl-204	IM-554
Osborne Materials Co. P.O. Box 248 Grand River, OH 44045-0248 216-357-5562 Harold T. Larned, pres.	Osborne Materials Co. (2)	Lake Erie	sand & gravel (dredged)	129,785	129,785	Lke-D ⁵¹	
Oster Sand & Gravel, Inc. 5947 Whipple Ave. NW North Canton, OH 44720-7692 216-494-5472 Marlene K. Oster, pres.	Oster Sand & Gravel, Inc. (326) Oster Sand & Gravel, Inc. (342)	Stark Tuscarawas	sand & gravel sand & gravel	429,671 127,589	429,671 127,589	Sk-165 Ts-1852	IM-192, IM-781 IM-75
Donald Ours Route 2 Box 44A Crown City, OH 45623 614-256-1378 Donald Ours, owner	Ours Pit (466)	Gallia	sand & gravel	6,625	6,625	Ga-O ⁵¹	IM-1028
Owens Stone Co., Inc. dba Delaware County Materials 1274 Ostrander Rd. Ostrander, OH 43061 614-881-4400 Kenneth F. Manning, pres.	Owens Stone Co., Inc. (22)	Delaware	limestone	220,804	234,027	Del-3	IM-327
Partin Sand & Gravel 4252 Taylorsville Rd. Dayton, OH 45424 513-233-9501 Arthur C. Partin, owner	Partin Sand & Gravel (236)	Montgomery	sand & gravel	4,300	4,300	My-55	IM-571
R. H. Penick Co. 1504 Blue Jay Rd. Heath, OH 43056 614-323-3040 R. H. Penick, owner	R. H. Penick Co. (3)	Licking	salt	9,397	9,397	Lg-45	
Penry Stone Co. P.O. Box 176 Radnor, OH 43066 614-595-3473 Walter P. Penry, pres.	Penry Stone Co. (23) Penry Stone Co. (198)	Delaware Marion	limestone sand & gravel	378,075 56,192	378,075 56,192	Del-2 Mn-4	IM-299 IM-290
Petersburg Stone Co. 5886 E. Pine Lake Rd. Petersburg, OH 44454 216-542-0033 George Pappas, owner	Petersburg Stone Co. (161)	Mahoning	limestone	8,900	8,900	Mg-629	IM-1008
Phillips Sand & Gravel U.S. Rte. 35 Box 187 Alpha, OH 45301 513-426-5461 George E. Phillips, pres.	Phillips Sand & Gravel (115)	Greene	sand & gravel	356,033	356,033	Ge-36	IM-305
Piqua Materials, Inc. Piqua Minerals Division 1750 W. Statler Rd. Piqua, OH 45356 513-773-4824 Albert R. Donovan, mgr.	Piqua Minerals (64)	Miami	limestone	297,692	294,347	Mi-1	IM-382
C. F. Poeppelman, Inc. 4755 N. State Rte. 721 Bradford, OH 45308 513-448-2191 James Poeppelman, pres.	C. F. Poeppelman, Inc. (67)	Miami	limestone	159,777	159,777	Mi-10	IM-335
Portage Lakes Sand & Gravel Co. 2800 N. Turkeyfoot Rd. Akron, OH 44319 216-644-2285 James V. Crano, pres.	Portage Lakes Sand & Gravel Co. (384)	Summit	sand & gravel	240,261	240,261	St-53	IM-874

⁵¹No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Prairie Lane Sand & Gravel Co. 4401 Prairie Lane Rd. Wooster, OH 44691 216-262-6821 Ralph W. Miller, Jr., pres.	Prairie Lane Sand & Gravel Co. (372)	Wayne	sand & gravel	123,827	123,827	We-11	IM-547
Precision Sand & Gravel 12205 Gypsy Lane Rd. Bowling Green, OH 43402 419-352-4681 Randolph G. Schmeltz, pres.	Precision Sand & Gravel (379)	Wyandot	sand & gravel	73,251	73,251	Wt-4	IM-520
Puskarich Limestone Co. P.O. Box 207 Sherrodsville, OH 44675 614-942-4656 Joseph Belden, pres.	Puskarich Limestone Co. (15)	Carroll	limestone	4,084	4,084	Cl-183	IM-7
Putnam Stone Co. R.R. 1, 7053 Road M Ottawa, OH 45875-9754 419-523-6004 J. E. Shroyer, pres.	Putnam Stone Co. (98)	Putnam	limestone	202,258	208,879	Pm-2	IM-570
Quality Ready Mix, Inc. R.R. 5 Wapakoneta, OH 45895 419-738-2817 Robert E. Hirschfeld, pres.	Quality Ready Mix, Inc. (25)	Auglaize	sand & gravel	36,874	29,584	Ae-16	IM-595
Quality Stone Co. 8751 N. State Rte. 7 Cheshire, OH 45620 614-992-6637 Jay Hall, Jr., pres.	Quality Stone Co. (148)	Vinton	limestone	147,936	153,623	Vn-190	D-0761
R & S, Inc. 7522 Wales Rd. NW North Canton, OH 44720 216-499-1024 Garry R. Ross, pres.	Copley Sand & Gravel (427)	Summit	sand & gravel	85,801	85,801	St-54	IM-934
Rack Sand, Inc. 5175 Este Ave. Cincinnati, OH 45232 513-242-5052 Roy Schweitzer, owner	Rack Sand, Inc. (139)	Hamilton	sand & gravel	130,023	130,023	Hmn-10	IM-226
Rainbow Sand & Gravel, Inc. 9500 Elliman Rd. Mantua, OH 44255 216-562-4701 Bernard Udelson & Jeremy Samson, owners	Rainbow Sand & Gravel, Inc. (280)	Portage	sand & gravel	2,000	2,000	Pe-64	IM-229, IM-1017
Ramsier Sand & Gravel 113 Howe St. Lodi, OH 44254 216-948-1749 Larry L. Ramsier, owner	Ramsier Sand & Gravel (205)	Medina	sand & gravel	⁵²		Ma-12	IM-516
Red Brush Peat Co. 6945 Red Brush Rd. Ravenna, OH 44326 216-297-0923 Barbara H. Linger, owner	Red Brush Peat Co. (482) (9)	Portage	sand & gravel peat	⁵² 825	0	Pe-61	IM-1064
Richards & Son, Inc. P.O. Box 232 Pomeroy, OH 45769 614-247-2311 Dennis R. Taylor, v. pres.	Richards & Son, Inc. (212)	Meigs	sand & gravel	682,415	682,415	Ms-298	IM-32
Richards Farms, Inc. 24537 Canal Rd. Circleville, OH 43113 614-474-3602 William J. Richards, pres.	Richards Farms, Inc. (481)	Pickaway	sand & gravel	18,771	18,771	Pky-R ⁵³	IM-993

⁵²No sales or production.⁵³No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Richland Moulded Brick Co. 1000 Richland Shale Rd. P.O. Box 1711 Mansfield, OH 44901 419-524-0000 Dudley P. Frame, Jr., pres.	Richland Moulded Brick Co. (114)	Richland	shale	20,000	20,000	Rd-R ⁵⁴	IM-1035
Ridge Township Quarry R.R. 1 Box 263 Van Wert, OH 45891 419-238-2533 Jenny Lautenschlegler, foreman	Ridge Township Quarry (122)	Van Wert	limestone	67,091	67,091	Vt-7	IM-642
Ries Sand & Gravel 169 State Rte. 95 Jeromesville, OH 44840 419-368-7833 Robert Ries, owner	Ries Sand & Gravel (6)	Ashland	sand & gravel	8,093	8,133	Ald-9	IM-745
Riverside Sand & Gravel Co., Inc. P.O. Box 324 Tallmadge, OH 44278-0324 216-673-2021 A. H. Acken, Jr., pres.	Riverside Sand & Gravel Co., Inc. (333) (49)	Summit	sand & gravel sandstone	12,389 38,895	12,389 38,895	St-24	IM-239
Gary Roberts Excavating 570 Derby Downs Rd. Newark, OH 43055 614-763-3206 Gary L. Roberts, owner	Gary Roberts Excavating (419)	Licking	sand & gravel	460	460	Lg-504	IM-991
L. G. Rockhold & Sons, Inc. 28541 State Rte. 739 West Mansfield, OH 43358 513-358-2224 Howard E. Rockhold, pres.	L. G. Rockhold & Sons, Inc. (119)	Union	limestone	67,924	76,540	Un-1 ⁵⁵	IM-208
Rogers Group, Inc. dba Norwalk Sand & Gravel P.O. Box 527 Sandusky, OH 44870 419-625-8493 Richard Rechter, pres.	Norwalk Sand & Gravel (157)	Huron	sand & gravel	73,030	89,181	Hrn-1	IM-550
Rogers Group, Inc. dba Sandusky Crushed Stone Co. P.O. Box 527 Sandusky, OH 44870 419-625-8493 Richard Rechter, pres.	Sandusky Crushed Stone Co. (25)	Erie	limestone	3,025,847	3,212,128	Ee-11	IM-263
Rubber City Sand & Gravel Co. P.O. Box 106 Uniontown, OH 44685 216-699-3311 William H. Leach, Sr., owner	Rubber City Sand & Gravel Co. (334)	Summit	sand & gravel	154,313	154,313	St-9	IM-167
Rubel Quarry, Inc. 35479 State Rte. 78 Lewisville, OH 43754 614-567-3217 Randy Rubel, pres.	Rubel Quarry, Inc. (164)	Monroe	limestone	⁵⁶		Me-509	IM-1094
Rupp Construction, Inc. 18228 Fulton Rd. Marshallville, OH 44645 216-855-2781 J. P. Radabaugh, pres.	Rupp Construction, Inc. (373)	Wayne	sand & gravel	283,162	283,162	We-7	IM-471
S & S Aggregate, Inc. P.O. Box 1585 Zanesville, OH 43702-1585 614-453-0624 Larry E. Young, v. pres.	Plant #1 (101) Plant #15 (414) Plant #13 (159) S & S Aggregate, Inc. (63) Twin Lakes Sand, Inc. (281) Twin Lakes Sand, Inc. (282) Twin Lakes Sand, Inc. (336)	Franklin Franklin Knox Mercer Portage Portage Summit	sand & gravel sand & gravel sand & gravel limestone sand & gravel sand & gravel sand & gravel	⁵⁶ ⁵⁶ 164,727 72,000 125,000 50,000 105,000		Fn-24 Fn-56 Kx-13 Mr-2 Pe-59 Pe-67 St-44	IM-266 IM-980 IM-343 IM-430 IM-210 IM-202 IM-178

⁵⁴No mine number has been assigned by the Division of Mines.⁵⁵This mine was operated 1st and 2nd quarters 1990 by L. G. Rockhold & Sons, Inc., and 3rd and 4th quarters by Northwood Stone and Asphalt Co.⁵⁶No sales or production.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
G. M. Sader Excavating & Paving, Inc. P.O. Box 306 Bowling Green, OH 43402 419-352-5113 Gregory M. Sader, pres.	G. M. Sader Excavating & Paving, Inc. (456) (104)	Wood	sand & gravel clay	3,384 57	1,758	Wd-13	IM-998
Salt Creek Materials, Inc. 880 Spry Rd. Zanesville, OH 43701 614-872-3860 Charles O. Lighthizer, owner	Salt Creek Materials, Inc. (248) Salt Creek Materials, Inc. (144) (425)	Muskingum Muskingum	sand & gravel limestone sand & gravel	57 9,707 1,654	9,707 0	Mum-216 Mum-269	IM-689 IM-623, IM-1009
Samco, Inc. 10217 State Rte. 534 N Middlefield, OH 44062 216-272-5158 J. Jim Holmes, pres.	Springbrook (340)	Ashtabula, Trumbull	sand & gravel	447,875	447,875	Tl-12 ⁵⁸	IM-131
Sandkuhl Tile Co., Inc. 05536 Kossuth-Amanda Rd. Spencerville, OH 45887 419-647-4131 Leslie E. Sandkuhl, pres.	Sandkuhl Tile Co., Inc. (2)	Auglaize	clay	4,750	6,407	Ae-7	
Sands Hill Coal Co., Inc. 1203 N. Pennsylvania Ave. Wellston, OH 45692 614-384-5659 Jack Huffman, pres.	Sands Hill Coal Co., Inc. (158)	Jackson	limestone	783,061	783,061	Jkn-SH ⁵⁹	IM-1068
Sant Sand & Gravel, Inc. P.O. Box 750 Mt. Vernon, OH 43050 614-397-0000 Keith L. Sant, pres.	Sant Sand & Gravel, Inc. (163)	Knox	sand & gravel	81,367	99,323	Kx-3	IM-300
Schilling Contractors, Inc. Rte. 2 Box 326 Ironton, OH 45638 614-532-8463 Earl P. Schilling, pres.	Schilling Contractors, Inc. (305)	Scioto	sand & gravel	57		So-78	
Schloss Paving Co. 13700 McCracken Rd. Cleveland, OH 44125 216-587-4900 Raymond E. Schloss, Sr., pres.	Schloss Paving Co. (274)	Portage	sand & gravel	75,030	75,030	Pe-60	IM-78
Schrader Sand & Gravel 293 Tile Mill Rd. Beaver, OH 45613 614-226-1902 Melvin Schrader, owner	Schrader Sand & Gravel (45)	Pike	sandstone	16,036	28,412	Pke-31	IM-835
Scioto Sand & Gravel P.O. Box 31 Marion, OH 43301-0031 614-726-2164 Gerald E. Fleming, pres.	Scioto Sand & Gravel (197)	Marion	sand & gravel	260	169	Mn-16	IM-171
Scioto Valley Resources P.O. Box 760 Lucasville, OH 45648 513-393-4211 John B. Patton, pres.	Scioto Valley Resources Division (395)	Scioto	sand & gravel	367,501	365,993	So-100	IM-760
Seaway Sand & Stone, Inc. 2190 Whitehouse-Spencer Rd. Swanton, OH 43558 419-865-5751 Mack S. Moon, pres.	Seaway Sand & Stone, Inc. (195) Seaway Sand & Stone, Inc. (473)	Lucas Lucas	sand & gravel sand & gravel	50,241 97,470	50,241 97,470	Ls-13 Ls-SS ⁵⁹	IM-492 IM-1069
Seville Sand & Gravel, Inc. 8215 Seville Rd. Seville, OH 44273 216-948-1812 George Cross, pres.	Seville Sand & Gravel, Inc. (206)	Medina	sand & gravel	305,427	305,427	Ma-22	IM-425, IM-650, IM-651

⁵⁷No sales or production.⁵⁸All sales and production are from Trumbull County.⁵⁹No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Shamrock Gravel Co. 2900 Woodsdale Rd. Trenton, OH 45067 513-988-0647 Dom M. Cisle, pres.	Shamrock Gravel Co. (38)	Butler	sand & gravel	656,244	656,244	Br-52	IM-814
Sharon Stone Co. P.O. Box 100 Dexter City, OH 45727 614-783-3575 John P. McCort, pres.	Sharon Stone Co. (167)	Noble	limestone	119,415	119,415	Ne-S ⁶⁰	IM-913
R. W. Sidley, Inc. 615 W. Main St. Conneaut, OH 44030 216-298-3232 Robert C. Sidley, pres.	Conneaut Pit (15)	Ashtabula	sand & gravel	32,000	40,500	Asa-15	IM-783
R. W. Sidley, Inc. 7123 Madison Rd. Thompson, OH 44086 216-298-3232 Robert C. Sidley, pres.	Thompson Pit (18) Painesville Pit (166)	Geauga Lake	sandstone sand & gravel	195,200 37,100	287,000 34,600	Gea-1 Lke-7	IM-163 IM-162
Sidney Sand & Gravel Co. P.O. Box 379 Sidney, OH 45365 513-492-3125 Patrick H. Milligan, pres.	Milligan & Milligan-Washington Twp. Pit (312) Rock Run Quarry (111) Sidney Sand & Gravel Co. (493)	Shelby Shelby Shelby	sand & gravel limestone sand & gravel	236,003 56,063 125,000	236,003 56,063 125,000	Shy-13 Shy-16 Shy-S ⁶⁰	IM-412 IM-411 IM-1005
Sidwell Bros., Inc. 4620 Limestone Valley Rd. Zanesville, OH 43701 614-849-2392 Dale R. Sidwell, pres.	Stone Hill Quarry (146) Sidwell Quarry (78)	Coshocton Muskingum	limestone limestone	79,398 604,000	79,398 604,000	Cn-830 Mum-104	IM-1049 IM-277
Silchuk Gravel Co. 2470 Wall Rd. Rittman, OH 44270 216-336-8796 Junior F. Silchuk, owner	Silchuk Gravel Co. (208)	Medina	sand & gravel	⁶¹		Ma-16	
Joe Simak & Sons Trucking, Inc. 3052 E. Center St. P.O. Box 599 North Kingsville, OH 44068 216-224-1992 Joseph E. Simak, pres.	Penn Line Pit (394)	Ashtabula	sand & gravel	508	332	Asa-S ⁶⁰	IM-853
Small's Sand & Gravel, Inc. P.O. Box 617 Gambier, OH 43022 614-427-4096 Michael Small, pres.	Small's Sand & Gravel, Inc. (165) Small's Sand & Gravel, Inc. (408)	Knox Knox	sand & gravel sand & gravel	279,150 ⁶¹	279,150	Kx-15 Kx-17	IM-967 IM-968
Sober Sand & Gravel Co. 2898 Tallmadge Rd. Ravenna, OH 44266 216-325-7013 Waldo A. Sober, pres.	Sober Sand & Gravel Co. (275)	Portage	sand & gravel	774	664	Pe-18	IM-193
Soehnlén Bros. Sand & Gravel, Inc. Rte. 1 Box 88 Beach City, OH 44608 216-756-2244 Francis L. Soehnlén, pres.	Soehnlén Bros. Sand & Gravel, Inc. (343)	Tuscarawas	sand & gravel	48,500	57,244	Ts-1826	IM-88
Solomon's Mines 37551 Butcher Rd. Salem, OH 44460 216-332-4634 Jack Solomon, owner	Solomon's Mines (196)	Mahoning	sand & gravel	⁶¹		Mg-S ⁶⁰	IM-808
Solon Excavators Sand & Gravel, Inc. 10925 Mantua Center Rd. P.O. Box Q Mantua, OH 44255 216-274-8241 Howard Sargent, pres.	Trethewey (443) Solon Excavators Sand & Gravel, Inc. (276) Solon Excavators Sand & Gravel, Inc. (485) Solon Excavators Sand & Gravel, Inc. (486)	Geauga Portage Portage Portage	sand & gravel sand & gravel sand & gravel sand & gravel	126,460 70,364 37,612 62,259	126,460 70,364 37,612 62,259	Gea-40 Pe-36 Pe-S ⁶⁰ Pe-SE ⁶⁰	IM-977 IM-90 IM-1082 IM-1096

⁶⁰No mine number has been assigned by the Division of Mines.⁶¹No sales or production.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Soltis Sand & Gravel 19102 Nelson Ledge Rd. Garrettsville, OH 44231 216-548-5813 James W. Soltis, owner	Soltis Sand & Gravel (415) (86)	Geauga	sand & gravel clay	6,705 82	6,705 82	Gea-9	IM-132
Southern Ohio Aggregates, Inc. 11641 Mosteller Rd. Cincinnati, OH 43113 513-771-0820 James P. Jurgensen, pres.	Southern Ohio Aggregates, Inc. (460) Southern Ohio Aggregates, Inc. (284)	Butler Preble	sand & gravel sand & gravel	97,500 1,000	97,500 1,000	Br-S ⁶² Pre-7	IM-1053 IM-306
Southern Silica, Inc. P.O. Box 22 Richmond Dale, OH 45673 614-884-4721 George W. Cannon, Jr., pres.	Southern Silica, Inc. (34)	Ross	sandstone	273,176	273,176	Rs-16	IM-172
Southwestern Portland Cement Co. Eastern Division 506 E. Xenia Rd. P.O. Box 191 Fairborn, OH 45324 513-878-8651 Clarence Comer, pres.	Southwestern Portland Cement Co. (33) Southwestern Portland Cement Co. (10) Southwestern Portland Cement Co. (34) Harner (90) Southwestern Portland Cement Co. (72)	Clark, Greene Greene Greene Greene Montgomery	limestone clay limestone clay limestone	⁶³ ⁶³ 360,418 127,841 208,097	⁶³ ⁶³ 986,280 127,841 360,147	Ge-1 Ge-8 Ge-9 Ge-44 My-58	IM-393 IM-364 IM-364 IM-330
Speer Bros., Inc. 3812 Old Railroad Rd. Sandusky, OH 44870 419-626-5291 David Speer, pres.	Speer Bros., Inc. (89)	Erie	clay	⁶³		Ee-32	IM-1077
Sphagnum Moss Peat Farm 9797 Thompson Rd. West Liberty, OH 43357 513-246-2911 Mike Poling, leassor	Sphagnum Moss Peat Farm (2)	Champaign	peat	32,820	26,530	Cpn-9	
Spring Creek Corp. 4723 Hardin-Wapak Rd. Sidney, OH 45365 513-492-4186 Nelson E. Barhorst, pres.	Pence Deposit (314) River Quarry (112) Jones Deposit (315)	Shelby Shelby Shelby	sand & gravel limestone sand & gravel	363,848 165,272 95,955	363,848 165,272 95,955	Shy-11 Shy-15 Shy-18	IM-743 IM-387 IM-388
Spring Creek Gravel Co., Inc. 4723 Hardin-Wapak Rd. Sidney, OH 45365 513-492-4186 Nelson E. Barhorst, pres.	Spring Creek Gravel Co., Inc. (494)	Shelby	sand & gravel	5,000	5,000	Shy-SC ⁶²	IM-1018
Spring Industries, Inc. P.O. Box 507 New Philadelphia, OH 44663 216-339-3585 Glenn Straub, pres.	Newcomerstown Plant (72) Midvale Pit (344) County Line Plant (345)	Coshocton Tuscarawas Tuscarawas	sand & gravel sand & gravel sand & gravel	⁶³ 423,167 ⁶³	⁶³ 552,400 ⁶³	Cn-624 Ts-1771 Ts-1788	IM-243 IM-77 IM-73
Spring Run Farm & Gravel 11070 Township Rd. 71 Killbuck, OH 44637-9715 216-276-2444 Gene Boughman, owner	Spring Run Farm & Gravel (416) (111)	Holmes	sand & gravel shale	15,936 ⁶³	15,936	Hs-96	IM-997
Spring Valley Investments, Inc. 2800 N. Turkeyfoot Rd. Akron, OH 44319 216-644-2285 James V. Crano, pres.	Spring Valley Investments, Inc. (335)	Summit	sand & gravel	⁶³		St-26	IM-803
City of Springfield 201 Eagle City Rd. Springfield, OH 45502 513-390-7210 Mark Ricketts, water plant maintenance supervisor	City of Springfield (437)	Clark	sand & gravel	⁶³		Ck-7	IM-449
Springfield Sand & Gravel Co. 4301 S. Charleston Pike Springfield, OH 45502 513-325-7386 Don E. Mill, pres.	Springfield Sand & Gravel Co. (58)	Clark	sand & gravel	441,184	441,184	Ck-25	IM-358

⁶²No mine number has been assigned by the Division of Mines.⁶³No sales or production.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Standard Slag Co. 1200 Stambaugh Bldg. P.O. Box 1378 Youngstown, OH 44501 216-743-3151 D. B. Peart, pres. & CEO	Adams (2) Standard Slag Co. (156) Marblehead (84) Cutlip (255) Shalersville (277) Shalersville Portable (278) Standard Slag Co. (487) Haverhill (306) Navarre (453)	Adams Hardin Ottawa Pike Portage Portage Portage Scioto Stark	limestone limestone limestone sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel sand & gravel	355,216 ⁶⁴ 1,515,588 253,797 1,240,267 1,381 64 428,354 64	398,909 1,537,321 202,463 1,301,101 100,000 342,689	Ads-6 Hdn-S ⁶⁵ Oa-7 Pke-24 Pe-68 Pe-SS1 ⁶⁵ Pe-SS2 ⁶⁵ So-79 Sk-241	IM-659 IM-1034 IM-440 IM-222 IM-143, IM-687 IM-660 IM-1047 IM-221 IM-582
Steetley Quarry Products U.S., Inc. Ohio Lime Co. 128 E. Main St. Woodville, OH 43469 419-849-2321 Ian McGregor, pres.	Millersville (103) Woodville (104)	Sandusky Sandusky	limestone limestone	1,398,056 ⁶⁶	1,343,209	Sy-4 Sy-3	IM-381 IM-282
Stewart & Reichman, Inc. Rte. 1 Box 63 Gnadenhutten, OH 44629 614-922-0050 Timothy G. Brown, pres.	Stewart & Reichman, Inc. (346)	Tuscarawas	sand & gravel	37,713	37,713	Ts-111	IM-55
Stillwater Sand & Gravel, Inc. 7850 Karns Rd. West Milton, OH 45383 513-698-3028 Ed Bohse, pres.	Stillwater Sand & Gravel, Inc. (447)	Miami	sand & gravel	102,670	122,800	Mi-504	IM-1032
Stocker Sand & Gravel Co. P.O. Box 176 Gnadenhutten, OH 44629 614-254-4635 William E. Stocker, pres.	Stocker Sand & Gravel Co. (347) Stocker Sand & Gravel Co. (348)	Tuscarawas Tuscarawas	sand & gravel sand & gravel	406,618 447,876	406,618 447,876	Ts-69 Ts-125	IM-51 IM-50
Stoneco, Inc. 1345 Ford St. P.O. Box 29A Maumee, OH 43537 419-893-8731 J. T. Kirkby, pres.	Maumee Quarry (54) Celina Quarry (62) Rocky Ridge (83) Auglaize Quarry (88) Scott Quarry (121) South Montpelier (375) North Montpelier (376) Lime City Quarry (131) Portage Quarry (132)	Lucas Mercer Ottawa Paulding Van Wert Williams Williams Wood Wood	limestone limestone limestone limestone limestone sand & gravel sand & gravel limestone limestone	915,127 355,181 161,602 455,567 280,494 295,484 64 650,041 195,775	1,087,512 272,890 138,879 521,728 201,783 86,325 569,960 177,229	Ls-2 Mr-1 Oa-14 Pg-2 Vt-3 Ws-6 Ws-9 Wd-6 Wd-11	IM-503 IM-592 IM-320 IM-481 IM-495 IM-497 IM-498 IM-480 IM-475
Stone Creek Brick Co. P.O. Box 116 Stone Creek, OH 43840 216-339-5511 A. C. Marsh, Jr., pres.	Stone Creek Clay Mine (67) Stone Creek Shale Pit (67)	Tuscarawas Tuscarawas	clay shale	46,594 6,457	46,594 6,457	Ts-1557 Ts-1558	IM-52 IM-52
Suever Stone Co., Inc. State Rte. 697 P.O. Box 338 Delphos, OH 45833 419-692-0931 Carl Suever, pres.	Suever Stone Co., Inc. (7) Delphos Quarry (123)	Allen Van Wert	limestone limestone	111,510 111,755	111,510 131,766	An-4 Vt-1	IM-491 IM-500
Dave Sugar, Inc. P.O. Box AH New Middletown, OH 44442 216-542-9397 David Sugar, pres.	Dave Sugar, Inc. (475)	Mahoning	sand & gravel	64		Mg-630	IM-1091
Sugarcreek Clay & Limestone, Inc. P.O. Box 402 Sugarcreek, OH 44681 216-852-4440 Daniel O. Miller, pres.	Sugarcreek Clay & Limestone, Inc. (118) Sugarcreek Clay & Limestone, Inc. (69) (69)	Tuscarawas	limestone clay shale	56,724 64 64	63,427	Ts-1928	IM-98
Summitville Tiles, Inc. Summitville, OH 43962 216-223-1511 David Johnson, pres.	Summitville Tiles, Inc. (5)	Columbiana	shale	32,038	32,038	Ca-205	IM-74
Swingle Drilling, Inc. P.O. Box 220 Crooksville, OH 43731 614-982-8420 James Swingle, pres.	Swingle Drilling, Inc. (97)	Perry	clay	64		Py-S ⁶⁵	IM-1080

⁶⁴No sales or production.⁶⁵No mine number has been assigned by the Division of Mines.⁶⁶All sales and production are reported under Sy-3.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Takacs Excavating Route 3 Bryan, OH 43543 419-636-2095 John Takacs, owner	Takacs Excavating (506)	Williams	sand & gravel	2,000	2,000	Ws-T ⁶⁷	IM-1022
Tarbox-McCall Stone Co. Div. of Hancock Ready Mix, Inc. 852 Western Ave. Findlay, OH 45840 419-422-1912 Kenneth R. Pfirsch, pres.	Tarbox-McCall Stone Co. (37)	Hancock	limestone	192,119	194,000	Hk-2	IM-439
Taylor Stone Co., Inc. P.O. Box 186 McDermott, OH 45652 614-259-2361 William E. McKinney, pres.	Taylor Quarry (35)	Scioto	sandstone	⁶⁸		So-47	IM-251
Teague Gravel Co., Inc. 10924 Kinsman Rd. Newbury, OH 44065 216-564-5671 Donald Teague, pres.	Teague Gravel Pit (109)	Geauga	sand & gravel	100,922	100,922	Gea-35	IM-321
Tipp Stone Co., Inc. P.O. Box 367 Troy, OH 45373 513-890-4051 T. L. Eidemiller, pres.	Troy (446) Meeker (238)	Miami Montgomery	sand & gravel sand & gravel	2,105 117,160	2,105 117,160	Mi-12 My-61	IM-467 IM-468
Towne Square Products 156 E. Broadway Westerville, OH 43081 614-882-6990 Suzanne Stilson Edgar, pres.	Towne Square Products (41)	Noble	shale	1,775	1,775	Ne-66	IM-664
Tri-County Limestone Co. 4664 Hardin-Marion Rd. N Kenton, OH 43326 419-675-7127 Norman Cochran, pres.	Tri-County Limestone Co. (61)	Marion	limestone	150,335	150,335	Mn-1	IM-250
Tri-State Asphalt Products 44 Sixteenth St. Wheeling, WV 26003 304-233-1110 Glenn Straub, pres.	Tri-State Asphalt Products (26)	Belmont	sand & gravel	373,452	361,300	Bt-74	IM-288
Trout Sand & Gravel Co. Rte. 4 Marietta, OH 45750 614-373-7471 Henry C. Trout, Jr., owner	Trout Sand & Gravel Co. (369)	Washington	sand & gravel	42,732	42,732	Wn-510	IM-25
Tuffco Sand & Gravel, Inc. 327 N. Main St. Marysville, OH 43040 513-644-9262 David J. Morrison, pres.	Tuffco Sand & Gravel, Inc. (474)	Madison	sand & gravel	42,974	42,974	Mdn-T ⁶⁷	IM-1063
U.S. Silica Co. P.O. Box 100 Rockwood, MI 48173 815-434-0188 Richard E. Goodell, pres.	Coxey Works (42)	Tuscarawas	sandstone	29,500	29,500	Ts-1660	IM-68
Union Aggregates Co. 8328 Watkins Rd. P.O. Box 178 Ostrander, OH 43061 614-666-2013 Don Mill, pres.	Prospect Sand & Gravel Plant (200) Green Camp Gravel Plant (201) Union Limestone Plant (120)	Marion Marion Union	sand & gravel sand & gravel limestone	38,582 ⁶⁸ 532,376	29,170 532,376	Mn-10 Mn-12 Un-2	IM-196 IM-197 IM-236
Union Slag Corp. Rte. 4 Marietta, OH 45750 614-373-5436 Josephine Hune, owner	Plant #3 (370) Plant #2 (371)	Washington Washington	sand & gravel sand & gravel	35,583 32,374	28,361 32,753	Wn-43 Wn-44	IM-61 IM-63

⁶⁷No mine number has been assigned by the Division of Mines.⁶⁸No sales or production.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
United Builders Distributing Corp. 24371 State Rte. 30 E. Rochester, OH 44625 216-894-2394 Roger McDaniel, pres.	United Builders Distributing Corp. (464)	Columbiana	sand & gravel	⁶⁹		Ca-U ⁷⁰	IM-999
V. I. P. Contractors, Inc. 3152 C1 Lighthouse Dr. Fairfield, OH 45014 513-874-8704 James E. Broshear, pres.	V. I. P. Contractors, Inc. (28)	Butler	sand & gravel	⁶⁹		Br-36	IM-649
Valley Materials Co. 4947 U.S. Rte. 23 South P.O. Box 400 Piketon, OH 45661 614-289-4400 Ralph McFann, pres.	Valley Materials Co. (252) (99)	Pike	sand & gravel clay	88,885 ⁶⁹	88,885	Pke-26	IM-142
Van Camp Contracting Co. 2606 N. Court St. P.O. Box 588 Circleville, OH 43113 614-474-8851 Ralph W. Anderson, pres.	Van Camp Contracting Co. (492)	Ross	sand & gravel	⁶⁹		Rs-VC ⁷⁰	IM-1085
Van Wey Sand & Gravel, Inc. 6824 Mt. Vernon Rd. NE Newark, OH 43055 614-745-5965 Richard L. Van Wey, pres.	Van Wey Sand & Gravel, Inc. (179)	Licking	sand & gravel	336,188	454,800	Lg-10	IM-217
Wagner Quarries Co. 4203 Milan Rd. Sandusky, OH 44870 419-625-8141 Stephen C. Lochner, pres.	Wagner Quarries Co. (26) Wagner Quarries Co. (145)	Erie Erie	limestone limestone	1,790,481 ⁶⁹	1,734,484	Ee-1 Ee-31	IM-310 IM-1044
Waller Bros. Stone Co. P.O. Box 157 McDermott, OH 45652 614-259-2356 L. M. Shope, v. pres.	Inskeep Quarry (36) Crabtree Quarry (37) Miller Quarry (38)	Scioto Scioto Scioto	sandstone sandstone sandstone	21,934 6,334 ⁶⁹	21,934 6,334	So-48 So-76 So-82	IM-140 IM-141 IM-158
Walter's Gravel 11302 National Rd. SE Thornville, OH 43076 614-323-0783 Viva W. Fenice, owner	Walter's Gravel (180)	Licking	sand & gravel	⁶⁹		Lg-15	
Ward Materials, Inc. R.R. 2 385 Oak St. Leipsic, OH 45856 419-943-2450 Arnold W. Rosebrock, pres.	Ward Materials, Inc. (2)	Allen	sand & gravel	70,622	68,972	An-15	IM-721
Don Wartko Construction, Inc. 975 Tallmadge Rd. Kent, OH 44240 216-673-5252 Donald Wartko, pres.	Don Wartko Construction, Inc. (483)	Portage	sand & gravel	2,049	2,049	Pe-92	IM-522
Washington County Engineer 205 Putnam St. Marietta, OH 45750 614-373-6623 Paul F. Junk, engineer	Washington County Pit (505)	Washington	sand & gravel	27,000	27,000	Wn-Wn ⁷⁰	IM-989
Waterloo Coal Co., Inc. P.O. Box 626 Jackson, OH 45640 614-682-7787 Phil A. Bowman, v. pres.	Zoar (47) (23)	Jackson	limestone clay	⁶⁹ ⁶⁹		Jkn-367	IM-774, D-0205, D-0273, D-0286, D-0594
Watson Gravel, Inc. 2728 Hamilton-Cleves Rd. P.O. Box 277 Ross, OH 45061 513-863-0070 Ronald E. Watson, pres.	Watson Pit (44) Spring Valley (441) Harrison Pit (142) Mason Pit (363)	Butler Greene Hamilton Warren	sand & gravel sand & gravel sand & gravel sand & gravel	592,989 293,008 435,378 3,302	592,989 293,008 435,378 3,302	Br-47 Ge-38 Hmn-60 Wan-10	IM-111 IM-333 IM-761 IM-465

⁶⁹No sales or production.⁷⁰No mine number has been assigned by the Division of Mines.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
Weber Aggregates P.O. Box 116 Reedsville, OH 45772 614-378-6293 Denver Weber, owner	Weber Aggregates (459)	Athens	sand & gravel	13,791	13,791	As-W ⁷¹	IM-979
Weber Sand & Gravel, Inc. Rte. 2 Box 3 Bryan, OH 43506 419-636-7920 Thomas G. Weber, pres.	Weber Sand & Gravel, Inc. (377)	Defiance, Williams	sand & gravel	254,215	254,215	Ws-11 ⁷²	IM-509, IM-661
Weidle Sand & Gravel, Inc. P.O. Box 247 Germantown, OH 45327 513-855-2228 Ronald L. Weidle, Sr., pres.	Weidle Sand & Gravel, Inc. (41) Weidle Sand & Gravel, Inc. (239)	Butler Montgomery	sand & gravel sand & gravel	60,142 105,051	60,142 105,051	Br-6 My-41	IM-177 IM-360
Welch Sand & Gravel, Inc. 10217 Columbia St. Harrison, OH 45030-9751 513-353-3220 Charles H. Welch, pres.	Schlichter Pit (45) Fernald Pit (143) East Miami Pit (144)	Butler Hamilton Hamilton	sand & gravel sand & gravel sand & gravel	183,637 199,500 392,084	183,637 199,500 392,084	Br-38 Hmn-42 Hmn-48	IM-218 IM-823 IM-220
White Eagle Mining, Inc. Rte. 1 Box 163 Pedro, OH 45659 614-532-1952 William Shope, Jr., pres.	White Eagle Mining, Inc. (94)	Lawrence	clay	12,000	12,000	Le-W ⁷¹	IM-1050
Whitewater Aggregates, Inc. P.O. Box 15307 Cincinnati, OH 45215 513-761-7800 Elster Varney, Jr., v. pres., operations	Whitewater Aggregates, Inc. (407)	Hamilton	sand & gravel	820,820	835,824	Hmn-69	IM-969
Widmor Coal Co. P.O. Box 176 Blaine, OH 43909 614-635-4811 Frank Widmor, owner	Widmor Coal Co. (152) (105) (105)	Belmont	limestone clay shale	⁷³ ⁷³ ⁷³		Bt-1109	IM-1089
Mark Williams Blacktop Co., Inc. Rte. 4 Box 34 Marietta, OH 45750 614-373-2457 Mark Williams, owner	Williams Pit #1 (504)	Washington	sand & gravel	40,527	40,527	Wn-1007	IM-1042
Dennis Winzeler Center St. Rte. 4 Box 4 Bryan, OH 43506 419-636-4285 Dennis & Polly Winzeler, owners	Dennis Winzeler (378)	Williams	sand & gravel	⁷³		Ws-14	IM-614
Wise Gravel 8535 W. Klinger Rd. Covington, OH 45318 513-473-3246 John A. Wise, owner	Wise Gravel (221)	Miami	sand & gravel	7,000	7,000	Mi-9	IM-408
Wyandot Dolomite, Inc. P.O. Box 126 Carey, OH 43316-0126 419-396-7641 Harold P. Wolfe, pres.	Wyandot Dolomite, Inc. (135)	Wyandot	limestone	1,081,475	1,066,579	Wt-8	IM-273
Wysong Gravel Co. 5040 Wolfe Creek Pike P.O. Box 5 Dayton, OH 45426-0005 513-962-2559 Gerald E. Wysong, pres.	Camden Plant (285) West Alexandria Plant (286)	Preble Preble	sand & gravel sand & gravel	38,811 76,522	38,811 76,522	Pre-4 Pre-6	IM-477 IM-478
Wysong Stone Co. 5897 State Rte. 503 N Lewisburg, OH 45338 513-962-2559 Gerald E. Wysong, pres.	Wysong Stone Co. (95)	Preble	limestone	82,876	82,876	Pre-5	IM-447

⁷¹No mine number has been assigned by the Division of Mines.⁷²All sales and production are from Williams County.⁷³No sales or production.

1990 OHIO ALPHABETICAL DIRECTORY OF INDUSTRIAL-MINERAL MINE OPERATORS—Continued

Name, address, telephone number, and president/owner/manager of company	Name of mine (and map location number)	County	Commodity	1990 sales (tons)	1990 production (tons)	State mine number	Division of Reclamation permit number
X L Sand & Gravel P.O. Box 157 Negley, OH 44441 216-426-9876 Robert Lansberry, pres.	X L Sand & Gravel (68)	Columbiana	sand & gravel	84,000	84,000	Ca-881	IM-611
Xenia Sand, Gravel, & Asphalt Co. 588 Dayton-Xenia Rd. P.O. Box 10 Xenia, OH 45385 513-372-2978 David A. Thompson, owner	Xenia Sand, Gravel, & Asphalt Co. (117)	Greene	sand & gravel	14,738	14,262	Ge-10	IM-518
York Road Gravel Co. 8819 York Rd. SW Pataskala, OH 43062 614-927-1524 Jack & Jean Klima, owners	York Road Gravel Co. (181)	Licking	sand & gravel	6,360	6,360	Lg-38	IM-695
Young's Sand & Gravel Co. 689 State Rte. 39 W P.O. Box 117 Loudonville, OH 44842 419-994-3040 Milton, Marion, & Delmar Young, partners	Young's Sand & Gravel Co. (8) Young's Sand & Gravel Co. (412)	Ashland Ashland	sand & gravel sand & gravel	135,770 158,016	151,630 182,121	Ald-7 Ald-15	IM-392 IM-944
Zerger's Quarry 100 N. Sycamore St. Woodsfield, OH 43793 614-472-1675 Herman Zerger, owner	Zerger's Quarry (80)	Monroe, Noble	limestone	10,052	10,052	Ne-86 ⁷⁴	IM-70
Zink Petroleum Corp. dba State Rte. 416 Sand & Gravel 1530 Corporate Woods Pky. Suite 200 Uniontown, OH 44685 216-896-1868 Jeffrey E. Zink, pres.	State Rte. 416 Sand & Gravel (500)	Tuscarawas	sand & gravel	44,097	44,097	Ts-2018	IM-1076
Zoar Mining Co. P.O. Box 550 Zoar, OH 44697 216-874-2434 David W. Johnson, pres.	Zoar Mining Co. (70) (70) Zoar Mining Co. (71) (71)	Tuscarawas Tuscarawas	clay shale clay shale	⁷⁵ ⁷⁵ 9,948 ⁷⁵	⁷⁵ ⁷⁵ 9,948 ⁷⁵	Ts-538 Ts-540	IM-27 IM-28
Zollinger Sand & Gravel Co. 11899 Easton Rd. Rittman, OH 44270 216-855-2464 Carl Zollinger, pres.	Zollinger Sand & Gravel Co. (374)	Wayne	sand & gravel	157,290	157,290	We-15	IM-398

⁷⁴All sales and production are from Noble County.⁷⁵No sales or production.

1990 LIMESTONE/DOLOMITE COMPANIES WITH SALES OR PRODUCTION

Company	No. of operations	Sales (tons)	Production (tons)	Company	No. of operations	Sales (tons)	Production (tons)
All Stone Co.	1	8,045	8,045	Melvin Stone Co.	3	1,058,504	1,058,504
American Aggregates Corp.	13	7,030,301	7,703,663	Miami River Stone Co.	1	335,526	320,522
Atlas Stone Co.	1	250,000	250,000	National Lime & Stone Co.	9	8,452,158	8,412,300
Ayers Limestone Quarry, Inc.	1	91,734	91,734	North Shore Stone Quarries, Inc.	1	8,211	8,211
Barrett Paving Materials, Inc.	1	221,787	244,698	Northwood Stone & Asphalt Co.	2	220,761	296,850
Belville Mining Co., Inc.	1	75,962	75,962	Ohio Asphaltic Limestone Corp.	1	267,108	261,000
Bluffton Stone Co.	1	195,603	195,603	Olen Corp.	1	334,500	334,500
Ray Blum Mining	1	100	100	Owens Stone Co., Inc.,	1		
Brown County Rock Crusher	1	4,716	6,932	dba Delaware County Materials	1	220,804	234,027
Central Ohio Coal Co.	3	336,984	336,984	Penry Stone Co.	1	378,075	378,075
Chesterhill Stone Co.	1	548,501	535,574	Petersburg Stone Co.	1 ¹	8,900	8,900
Christman Quarry	1	72,350	72,350	Piqua Materials, Inc.	1	297,692	294,347
Columbia Portland Cement Corp.	1	522,137	522,137	C. F. Poeppelman, Inc.	1	159,777	159,777
Con-Ag, Inc.	1	289,114	299,348	Puskarich Limestone Co.	1	4,084	4,084
Connolly Construction Co., Inc.	1	287,211	287,211	Putnam Stone Co.	1	202,258	208,879
Cravat Coal Co.	1	44,198	44,198	Quality Stone Co.	1	147,936	153,623
Davon, Inc.	2	2,162,521	2,188,944	Ridge Township Quarry	1	67,091	67,091
C. E. Duff & Son, Inc.	1	231,520	231,520	L. G. Rockhold & Sons, Inc.	1 ²	67,924	76,540
E.M.A.I. Corp	1	1,735,585	1,735,585	Rogers Group, Inc.,			
East Ohio Limestone Co.	1	117,896	120,428	dba Sandusky Crushed Stone Co.	1	3,025,847	3,212,128
R. A. Eberts Co., Inc.	1	339,078	339,078	S & S Aggregate, Inc.	1	72,000	72,000
Erie Blacktop, Inc.	1	215,434	289,583	Salt Creek Materials, Inc.	1	9,707	9,707
The France Stone Co.	6	3,305,416	4,102,035	Sands Hill Coal Co., Inc.	1	783,061	783,061
G & M Supply, Inc.,				Sharon Stone Co.	1	119,415	119,415
dba Clinton Stone, Inc.	1	365,706	365,706	Sidney Sand & Gravel Co.	1	56,063	56,063
GenLime Group, L.P.	1	405,565	327,379	Sidwell Bros., Inc.	2	683,398	683,398
Gottron Bros. Co.	1	97,470	95,079	Southwestern Portland Cement Co.	2	568,515	1,346,427
Gregory Stone Co., Inc.	1	3,148	3,148	Spring Creek Corp.	1	165,272	165,272
J. M. Hamilton & Sons Co., Inc.	1	114,651	114,651	Standard Slag Co.	2	1,870,804	1,936,230
Hardin Quarry Co., Inc.	1	188,454	188,454	Steetley Quarry Products U.S., Inc.,			
Holmes Limestone Co.	2	293,990	293,990	Ohio Lime Co.	2	1,398,056	1,343,209
Honey Creek Stone Co.	1	234,031	236,940	Stoneco, Inc.	7	3,013,787	2,969,981
Kimble Clay & Limestone Co.	1	92,165	92,165	Suever Stone Co., Inc.	2	223,265	243,276
King Limestone, Inc.	1	190,158	190,158	Sugarcreek Clay & Limestone, Inc.	1	56,724	63,427
Edward Kraemer & Sons, Inc.	1	1,258,400	1,147,014	Tarbox-McCall Stone Co., Div. of			
Lafarge Corp.	1	674,185	674,185	Hancock Ready Mix, Inc.	1	192,119	194,000
Latham Limestone, Inc.	1	268,357	256,542	Tri-County Limestone Co.	1	150,335	150,335
MacRitchie Materials, Inc.	1	157,679	157,679	Union Aggregates Co.	1	532,376	532,376
Maple Grove Stone Co.	1	104,544	104,544	Wagner Quarries Co.	1	1,790,481	1,734,484
Marshall Quarry, Inc.	1	4,026	4,026	Wyandot Dolomite, Inc.	1	1,081,475	1,066,579
Martin Marietta Magnesia				Wysong Stone Co.	1	82,876	82,876
Specialties, Inc.	1	1,711,001	1,711,001	Zerger's Quarry	1	10,052	10,052
Maxville Quarries, Inc.	2	221,906	196,055	TOTAL: 80 companies	122	52,697,852	55,001,240
McCarthy Stone Quarry	1	109,286	109,286				

¹This operation is in the same location as Ray Blum Mining and is not included in the total number of mines.²This mine was operated 3rd & 4th quarters 1990 by Northwood Stone & Asphalt Co. and is not included in the total number of mines.

1990 OHIO DIRECTORY OF LIMESTONE/DOLOMITE MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

County	Name of operator	Name of mine or quarry	Township	Geological unit	Type and principal use	State mine number
Adams	Davon, Inc.	Plum Run Stone Division	Meigs	Peebles, Greenfield, & Tymochtee Dolomites (Silurian)	crushed stone—riprap, flux stone, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, commercial building, railroad ballast, rock dust, sorbent, industrial uses; aglime	Ads-1
	Standard Slag Co.	Adams	Franklin	Niagaran dolomite (Silurian)	crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, commercial building	Ads-6
Allen	Bluffton Stone Co.	Bluffton Stone Co.	Richland	Tymochtee Dolomite (Silurian)	crushed stone—unspecified	An-1
	National Lime & Stone Co.	Lima Plant	Bath	Silurian	crushed stone—riprap, commercial building, railroad ballast; aglime	An-3 ¹
	Suever Stone Co., Inc.	Suever Stone Co., Inc.	Spencer	Tymochtee Dolomite (Silurian)	crushed stone—stone for asphaltic concrete, road construction/resurfacing, commercial building; aglime	An-4
Athens	R. A. Eberts Co., Inc.	Diamond Stone	Lee		crushed stone—riprap, flux stone, road construction/resurfacing, unspecified	As-533
Auglaize	Con-Ag, Inc.	Con-Ag, Inc.	Noble	Cedarville Dolomite (Silurian)	crushed stone—riprap, road construction/resurfacing	Ae-31
	National Lime & Stone Co.	Buckland Plant	Moulton	Silurian	crushed stone—riprap, commercial building, railroad ballast; aglime	Ae-10
Belmont	Ayers Limestone Quarry, Inc.	Ayers Limestone Quarry, Inc.	Pease	Permian	crushed stone—riprap, road construction/resurfacing	Bt-716
	Cravat Coal Co.	Dover Pit	York	Fishpot limestone (Pennsylvanian)	crushed stone—road construction/resurfacing	Bt-119
Brown	Brown County Rock Crusher	Brown County Rock Crusher	Lewis	Ordovician	crushed stone—road construction/resurfacing	Bn-1
Carroll	Puskarich Limestone Co.	Puskarich Limestone Co.	Lee	Pennsylvanian	crushed stone—road construction/resurfacing	Cl-183
Clark	American Aggregates Corp.	Springfield #423	Springfield	Cedarville Dolomite (Silurian)	crushed stone—road construction/resurfacing	Cl-1
Clinton	Melvin Stone Co.	Melvin Stone Co.	Richland	Guelph Dolomite (Silurian)	crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, commercial building, residential/farm use; aglime	Cln-1
Coshocton	All Stone Co.	All Stone Co.	White Eyes		crushed stone—unspecified	Cn-A ²
	Sidwell Bros., Inc.	Stone Hill Quarry	Bedford, Perry	Putnam Hill limestone (Pennsylvanian)	crushed stone—road construction/resurfacing	Cn-830
Crawford	National Lime & Stone Co.	Bucyrus Plant	Holmes	Devonian	crushed stone—riprap, flux stone, commercial building, railroad ballast, extenders, fillers; aglime	Cd-1
Darke	American Aggregates Corp.	Fort Jefferson #424	Butler	Cedarville Dolomite (Silurian)	crushed stone—road construction/resurfacing	Dke-1
Delaware	American Aggregates Corp.	Shawnee #225	Concord	Columbus & Delaware Limestones (Devonian)	crushed stone—road construction/resurfacing	Del-4
	National Lime & Stone Co.	Delaware Plant	Scioto	Columbus & Delaware Limestones (Devonian)	crushed stone—riprap, flux stone, commercial building, railroad ballast; aglime	Del-5
	Owens Stone Co., Inc. (dba Delaware County Materials)	Owens Stone Co., Inc.	Scioto	Columbus Limestone (Devonian)	crushed stone—road construction/resurfacing; aglime	Del-3

Erie	Penry Stone Co.	Penry Stone Co.	Radnor			crushed stone—riprap, unspecified; dimension stone	Del-2
	Erie Blacktop, Inc.	Erie Blacktop Quarry	Margaretta			crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing	Ee-27
	Rogers Group, Inc. (dba Sandusky Crushed Stone Co.)	Sandusky Crushed Stone Co.	Groton		Columbus & Delaware Limestones (Devonian)	crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, railroad ballast; aglime; stone sand, stone concrete blocks, stone septic tanks	Ee-11
	Wagner Quarries Co.	Wagner Quarries Co.	Perkins		upper Columbus & Delaware Limestones (Devonian)	crushed stone—road construction/resurfacing	Ee-1
Fayette	American Aggregates Corp.	Blue Rock Limestone #222	Perry		Tymochtee Dolomite (Silurian)	crushed stone—road construction/resurfacing	Fe-2
	Melvin Stone Co.	Limestone, Inc.	Green		Tymochtee Dolomite (Silurian)	crushed stone—riprap, road construction/resurfacing; commercial building, railroad ballast, residential/farm use; aglime	Fe-1
Franklin	American Aggregates Corp.	Columbus Limestone #221	City of Columbus		Columbus Limestone (Devonian)	crushed stone—road construction/resurfacing	Fn-53
		Marble Cliff #224	Norwich		Columbus & Delaware Limestones (Devonian)	crushed stone—road construction/resurfacing	Fn-2
	Olen Corp.	Hilliard Plant	Brown			crushed stone—riprap, road construction/resurfacing, commercial building	Fn-43
Greene	American Aggregates Corp.	Beaver creek Limestone #426	Bath		Cedarville Dolomite (Silurian)	crushed stone—road construction/resurfacing	Ge-45
		Cedarville Limestone #425	Cedarville		Cedarville Dolomite (Silurian)	crushed stone—road construction/resurfacing	Ge-17
		Fairborn Limestone #431	Sugar Creek		upper Brassfield Limestone (Silurian)	crushed stone—road construction/resurfacing	Ge-25
	Southwestern Portland Cement Co.	Southwestern Portland Cement Co.	Bath			stone for portland cement manufacture	Ge-9
Guernsey	King Limestone, Inc.	King Limestone, Inc.	Spencer		Fishpot limestone (Pennsylvanian)	crushed stone—road construction/resurfacing	Gy-309 ³
Hancock	National Lime & Stone Co.	Findlay Plant	Liberty		Niagaran dolomite (Silurian)	crushed stone—riprap, commercial building, railroad ballast, aglime	Hk-7
	Tarbox-McCall Stone Co. (Div. of Hancock Ready Mix, Inc.)	Tarbox-McCall Stone Co.	Liberty		Greenfield Dolomite (Silurian)	crushed stone—riprap, stone for portland cement concrete, road construction/resurfacing, commercial building	Hk-2
Hardin	Hardin Quarry Co., Inc.	Hardin Quarry Co., Inc.	Pleasant		Tymochtee Dolomite (Silurian)	crushed stone—riprap, road construction/resurfacing, commercial building; aglime	Hdn-2
Highland	Davon, Inc.	Highland Stone Division	Hamer		Brassfield & Dayton Limestones (Silurian)	crushed stone—riprap, stone for portland cement concrete, road construction/resurfacing, other; aglime	Hd-2
	Marshall Quarry, Inc.	Marshall Quarry, Inc.	Marshall			crushed stone—road construction/resurfacing, railroad ballast, unspecified	Hd-4
	Ohio Asphaltic Limestone Corp.	Ohio Asphaltic Limestone Corp.	Union			crushed stone—riprap, stone for asphaltic concrete, road construction/resurfacing; aglime	Hd-3
Holmes	Holmes Limestone Co.	241 Plant	Hardy		Putnam Hill limestone (Pennsylvanian)	crushed stone—road construction/resurfacing	Hs-67
Jackson	Sands Hill Coal Co., Inc.	Sands Hill Coal Co., Inc.	Milton			crushed stone—unspecified	Jkn-SH ²
Lawrence	Belville Mining Co., Inc.	Belville Mining Co., Inc.	Washington			crushed stone—riprap, road construction/resurfacing; aglime	Le-B ²

Information for An-3 includes information for An-2 and An-11.
²No mine number has been assigned by the Division of Mines.
³See also Muskingum County.

1990 OHIO DIRECTORY OF LIMESTONE/DOLOMITE MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY—Continued

County	Name of operator	Name of mine or quarry	Township	Geological unit	Type and principal use	State mine number
Logan	Connolly Construction Co., Inc. C. E. Duff & Son, Inc.	East Liberty Quarry C. E. Duff & Son, Inc.	Perry Richland	Tymochtee Dolomite (Silurian)	crushed stone—unspecified	Lgn-1
					crushed stone—riprap, stone for portland cement concrete, road construction/resurfacing, commercial building	Lgn-15
Lucas	Northwood Stone & Asphalt Co. Atlas Stone Co. The France Stone Co. Stoneco, Inc.	Northwood Stone & Asphalt Co. Atlas Stone Co. Sylvania Waterville Maumee Quarry	Richland Sylvania Sylvania Waterville Waynesfield		crushed stone—riprap, stone for asphaltic concrete, road construction/resurfacing	Lgn-2
					crushed stone—unspecified	Ls-12
					crushed stone—road construction/resurfacing	Ls-3
					crushed stone—road construction/resurfacing	Ls-1
					crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, commercial building, other; aglime	Ls-2
Mahoning	Ray Blum Mining E.M.A.I. Corp. Honey Creek Stone Co.	Ray Blum Mining Quarry #8 Honey Creek Stone Co.	Springfield Poland Springfield		crushed stone—unspecified	Mg-B ⁴
					crushed stone—unspecified	Mg-608
					crushed stone—stone for asphaltic concrete, road construction/resurfacing, commercial building, other	Mg-54
					crushed stone—farm use	Mg-629
Marion	Petersburg Stone Co. J. M. Hamilton & Sons Co., Inc.	Petersburg Stone Co. J. M. Hamilton & Sons Co., Inc.	Springfield Marion		crushed stone—stone for asphaltic concrete, road construction/resurfacing	Mn-2
				crushed stone—riprap, commercial building, railroad ballast, other; aglime	Mn-3	
				crushed stone—riprap, stone for portland cement concrete, road construction/resurfacing, dog/horse runs; aglime	Mn-1	
				crushed stone—unspecified	Mr-2	
Mercer	S & S Aggregate, Inc. Stoneco, Inc.	S & S Aggregate, Inc. Celina Quarry	Dublin Jefferson	crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, commercial building, railroad ballast, other; aglime	Mr-1	
				crushed stone—riprap, road construction/resurfacing, other; aglime	Mi-502	
Miami	Barrett Paving Materials, Inc. Gregory Stone Co., Inc. Piqua Materials, Inc.	Gregory Stone Gregory Quarry Piqua Minerals	Union Union	Brassfield Limestone (Silurian)	Mi-16	
				Brassfield Limestone, Dayton & Laurel Dolomites (Silurian)	Mi-1	
Monroe	C. F. Poeppelman, Inc.	C. F. Poeppelman, Inc.	Newberry	Cedarville Dolomite (Silurian)	Mi-10	
				crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, other; aglime	Me-501	
Montgomery	Christman Quarry American Aggregates Corp.	Christman Quarry Phillipsburg Limestone #421	Franklin Clay	Cedarville Dolomite (Silurian)	crushed stone—unspecified crushed stone—road construction/resurfacing	My-1

Morgan Muskingum	Southwestern Portland Cement Co.	Dayton Limestone #420 Huber Heights Limestone #432 Southwestern Portland Cement Co.	Madison Van Buren Wayne	Cedarville Dolomite (Silurian) Cedarville Dolomite (Silurian) upper Brassfield Limestone (Silurian)	crushed stone—road construction/resurfacing crushed stone—road construction/resurfacing stone for portland cement manufacture	My-23 My-32 My-58
	Central Ohio Coal Co. Central Ohio Coal Co. Chesterhill Stone Co.	Horse Run Stone Quarry Coal Hill Plant #1	Manchester Meigs Newton	Benwood limestone (Pennsylvanian) Maxville Limestone (Mississippian)	crushed stone—road construction/resurfacing crushed stone—road construction/resurfacing crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, stone for portland cement manufacture; aglime	Mon-600 Ne-C ⁴ Mum-106
	Columbia Portland Cement Corp. King Limestone, Inc. Salt Creek Materials, Inc. Sidwell Bros., Inc.	Lyle Quarry King Limestone, Inc. Salt Creek Materials, Inc. Sidwell Quarry	Newton Rich Hill Perry Newton	Fishpot limestone (Pennsylvanian) Maxville Limestone (Mississippian)	stone for portland cement manufacture crushed stone—road construction/resurfacing crushed stone—road construction/resurfacing crushed stone—stone for asphaltic concrete, road construction/resurfacing; aglime	Mum-24 Gy-309 ⁵ Mum-269 Mum-104
	Central Ohio Coal Co.	Hoskinsville Stone Quarry	Brookfield	Benwood & Sewickley limestones (Pennsylvanian)	crushed stone—riprap, road construction/resurfacing	Ne-147
Noble	Sharon Stone Co. Zerger's Quarry GenLime Group, L.P.	Sharon Stone Co. Zerger's Quarry GenLime Group, L.P.	Noble Stock Clay	Fishpot limestone (Pennsylvanian) Niagaran dolomite (Silurian)	dimension stone crushed stone—unspecified crushed stone—road construction/resurfacing, other; lime (burned stone)—building, chemical and industrial	Ne-S ⁴ Ne-86 Oa-1
	Edward Kraemer & Sons, Inc.	White Rock Quarry	Allen	Guelph Dolomite (Silurian)	crushed stone—riprap, flux stone, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, other; aglime	Oa-6
Paulding	Standard Slag Co.	Marblehead	Danbury	Columbus Limestone (Devonian)	crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing	Oa-7
	Stoneco, Inc.	Rocky Ridge	Benton		crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing	Oa-14
	The France Stone Co.	Paulding	Crane	Tennile Creek Dolomite (Devonian)	crushed stone—riprap, road construction/resurfacing	Pg-7
	Lafarge Corp. Stoneco, Inc.	Paulding Quarry Auglaize Quarry	Crane Auglaize	Detroit River Group & Dundee Limestone (Devonian) Detroit River Group & Dundee Limestone (Devonian)	stone for portland cement manufacture crushed stone—riprap, flux stone, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, commercial building, railroad ballast, other; aglime	Pg-1 Pg-2
Perry	Maxville Quarries, Inc.	Maxville Quarries, Inc.	Monday Creek	Maxville Limestone (Mississippian)	crushed stone—road construction/resurfacing	Py-235
	Malvin Stone Co.	Limestone, Inc.	Monday Creek Perry	Columbus Limestone (Devonian)	crushed stone—road construction/resurfacing crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, commercial building, railroad ballast, residential/farm use	Py-343 Pky-4

⁴No mine number has been assigned by the Division of Mines.
⁵See also Guernsey County

1990 OHIO DIRECTORY OF LIMESTONE/DOLOMITE MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

County	Name of operator	Name of mine or quarry	Township	Geological unit	Type and principal use	State mine number
Pike	Latham Limestone, Inc.	Latham Limestone, Inc.	Mifflin	Greenfield Dolomite (Silurian)	crushed stone—riprap, stone for asphaltic concrete, road construction/resurfacing, railroad ballast, other; aglime	Pke-13
Preble	Wysong Stone Co.	Wysong Stone Co.	Twin		crushed stone—riprap, road construction/resurfacing, ice control; dimension stone	Pre-5
Putnam	Putnam Stone Co.	Putnam Stone Co.	Pleasant, Riley	Silurian	crushed stone—riprap, stone for portland cement concrete, road construction/resurfacing	Pm-2
Sandusky	Gotttron Bros. Co.	Gotttron Bros. Co.	Sandusky	Niagaran dolomite (Silurian)	crushed stone—stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, commercial building, fill	Sy-5
	Martin Marietta Magnesia Specialties, Inc.	Woodville Quarry	Woodville	Guelph Dolomite (Silurian)	crushed stone—riprap, flux stone; lime (burned stone)—chemical and industrial	Sy-1
	Steelley Quarry Products U.S., Inc., Ohio Lime Co.	Woodville	Woodville	Silurian	crushed stone—flux stone, road construction/resurfacing; aglime; lime (burned stone)—chemical and industrial, other	Sy-3 ^s
Seneca	The France Stone Co.	Bloomville	Bloom	Columbus & Delaware Limestones (Devonian)	crushed stone—riprap, road construction/resurfacing; aglime	Sa-3
	Maple Grove Stone Co.	Flat Rock	Thompson	Columbus & Delaware Limestones (Devonian)	crushed stone—riprap, road construction/resurfacing; aglime	Sa-1
		Maple Grove	Liberty		crushed stone—stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing	Sa-2
Shelby	North Shore Stone Quarries, Inc.	North Shore Stone Quarries, Inc.	Thompson		crushed stone—riprap; dimension stone	Sa-8
	Miami River Stone Co.	Miami River Stone Co.	Orange	Cedarville Dolomite (Silurian)	crushed stone—riprap, stone for asphaltic concrete, road construction/resurfacing, railroad ballast, unspecified	Shy-6
	Sidney Sand & Gravel Co.	Rock Run Quarry	Washington		crushed stone—riprap	Shy-16
	Spring Creek Corp.	River Quarry	Clinton		crushed stone—road construction/resurfacing, commercial building	Shy-15
Stark	East Ohio Limestone Co.	East Ohio Limestone Co.	Lake	Putnam Hill limestone (Pennsylvanian)	crushed stone—road construction/resurfacing	Sk-663
Tuscarawas	Kimble Clay & Limestone Co.	Kimble Clay & Limestone Co.	Dover	Vanport limestone (Pennsylvanian)	crushed stone—riprap, road construction/resurfacing	Ts-1818
	Sugarcreek Clay & Limestone, Inc.	Sugarcreek Clay & Limestone, Inc.	Sugar Creek		crushed stone—road construction/resurfacing, unspecified	Ts-1928
Union	Northwood Stone & Asphalt Co.	Rockhold Division	York		crushed stone—stone for asphaltic concrete, road construction/resurfacing	Un-17
	L. G. Rockhold & Sons, Inc.	L. G. Rockhold & Sons, Inc.	York		crushed stone—stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing; aglime	Un-17
Van Wert	Union Aggregates Co.	Union Limestone Plant	Millcreek	Columbus Limestone (Devonian)	crushed stone—riprap, other; aglime	Un-2
	Ridge Township Quarry	Ridge Township Quarry	Ridge	Tymochtee Dolomite (Silurian)	crushed stone—road construction/resurfacing, unspecified	Vt-7

Stoneco, Inc.	Scott Quarry	Union		crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, other; aglime	Vt-3
Suever Stone Co., Inc.	Delphos Quarry	Washington	Tymochtee Dolomite (Silurian)	crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, railroad ballast, driveway use	Vt-1
G & M Supply, Inc. (dba Clinton Stone, Inc.)	Sands Hill	Clinton		crushed stone—road construction/resurfacing; aglime	Vn-174
Quality Stone Co.	Quality Stone Co.	Elk		crushed stone—unspecified	Vn-190
American Aggregates Corp.	Lytle Limestone #422	Wayne	Brassfield Limestone (Silurian)	crushed stone—road construction/resurfacing	Wn-35
Holmes Limestone Co.	Wayne Mines	Franklin	Putnam Hill limestone (Pennsylvanian)	crushed stone—road construction/resurfacing	Hs-79 ⁸
The France Stone Co.	Custar	Milton		crushed stone—riprap, road construction/resurfacing; aglime	Wd-5
MacRitchie Materials, Inc.	MacRitchie Materials, Inc.	Perry	Lockport & Salina Dolomites (Silurian)	crushed stone—unspecified	Wd-1
Stoneco, Inc.	Lime City Quarry	Perrysburg		crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, other; aglime	Wd-6
	Portage Quarry	Portage	Greenfield & Lockport Dolomites (Silurian)	crushed stone—riprap, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, other	Wd-11
McCarthy Stone Quarry	McCarthy Stone Quarry	Pitt	Bass Islands Group (Silurian)	crushed stone—stone for asphaltic concrete, road construction/resurfacing	Wt-3
National Lime & Stone Co.	Carey Plant	Crawford	Silurian	crushed stone—riprap, flux stone, commercial building, railroad ballast, extenders, fillers; aglime; lime (burned stone)—chemical and industrial	Wt-1
Wyandot Dolomite, Inc.	Wyandot Dolomite, Inc.	Crawford	Greenfield & Guelph Dolomites (Silurian)	crushed stone—riprap, flux stone, stone for portland cement concrete, stone for asphaltic concrete, road construction/resurfacing, commercial building, railroad ballast, manufacturing sand; aglime	Wt-8

⁸Information for Sy-3 includes information for Sy-4.

⁷This mine was operated 1st and 2nd quarters 1990 by L. G. Rockhold & Sons, Inc., and 3rd and 4th quarters by Northwood Stone and Asphalt Co.

⁸All sales and production are from Wayne County.

1990 SAND AND GRAVEL COMPANIES WITH SALES OR PRODUCTION

Company	No. of operations	Sales (tons)	Production (tons)	Company	No. of operations	Sales (tons)	Production (tons)
Agg Rok Materials, Div. of Wapak Sand & Gravel Co.	1	345,008	299,632	Fouremen's Sand & Gravel, Inc.	1	52,508	52,508
William Albert, Inc.	1	45,683	47,231	Frye Sand & Gravel, Inc.	1	2,669	2,669
Alden Sand & Gravel Co.	1	7,448	7,448	Ganges Gravel	1	3,659	3,659
American Aggregates Corp.	18	7,908,608	9,616,506	John L. Garber Materials, Inc.	1	240,710	252,000
American Sand & Gravel	3	216,640	216,640	Gerken Materials, Inc.	1	90,380	90,380
Apache Aggregate & Paving Co.	1	126,580	69,570	Gibson Sand & Gravel Co.	1	760	760
Ashcraft Sand & Gravel, Inc.	1	59,437	59,437	Goodwin Sand & Gravel, Inc.	1	73,878	83,065
Atlantic Investment Co.	1	24,000	24,000	The Gravel Co.	1	62,621	62,621
Atlas Towing Co.	1	27,514	27,514	Green Oaks Potting Products	1	4,000	4,000
Aurora Sand & Gravel, Inc.	1	173,976	174,421	H & H Utilities Co.	1	110,627	110,627
B & D Paving Co.	1	5,178	5,178	Harrison Sand & Gravel Co.	1	92,168	79,670
Baker Sand, Inc.	1	725,915	725,915	Haubeil & Sons Asphalt & Materials, Inc.	1	31,363	31,363
Barrett Paving Materials, Inc.	3	46,294	66,808	Haueter Sand & Gravel, Inc.	1	159,946	159,946
Beaver Creek Resources, Inc.	1	13,739	13,739	Heiser Sand & Gravel	1	6,538	6,538
Beck Sand & Gravel, Inc.	1	431,917	431,917	Hillsdale Sand & Gravel, Inc.	1	15,843	0
Becky Lane Trucking, Inc.	1	11,598	11,598	Hilltop Aggregate, Inc.	1	386,505	386,505
Paul D. Beery Trucking Co.	1	8,024	2,560	Hilltop Basic Resources, Inc.	2	897,467	1,151,885
Belu & Son Paving, Inc.	1	2,591	2,591	Hilltop Basic Resources, Inc., dba Enon Washed Sand & Gravel Co.	1	194,894	180,128
Benco Leasing, Inc.	1	28,722	60,522	Hocking Valley Concrete, Inc.	1	50,300	56,800
Black Top Contracting, Inc.	1	19,119	19,119	William A. Hoffman, Jr.	1	3,200	3,200
E. E. Blair Construction Co.	1	22,783	21,507	Tom Hollinger Excavating	1	722	722
Bolin & Bartley, Inc.	1	49,407	68,800	Huck Farms	1	100	100
Elmer Borchardt, Inc.	1	3,519	3,519	Hugo Sand Co.	1	246,935	246,935
D. H. Bowman & Sons, Inc.	1	47,196	49,923	Humphrey Farms	1	1,482	1,482
Boyd Gravel Co.	1	318,571	293,800	Indian Creek Sand & Gravel Co.	1	5,669	5,669
Briggs Sand & Gravel, Inc.	1	8,074	8,074	J. P. Sand & Gravel Co.	1	430,921	430,921
Broadway Sand & Gravel, Inc.	1	61,788	61,788	Jarrett Sand Co.	1	6,104	6,104
Broshear Contractors, Inc.	1	11,180	10,536	Jefferson Materials Co.	1	249,633	247,290
D & L Browning Excavating, Inc.	1	10	0	Jones Sand & Gravel Co.	1	11,000	11,000
Karl Brugmann Sand & Gravel, Inc.	1	94,115	82,649	Joseph Sand & Gravel	1	8,789	8,789
Oscar Brugmann Sand & Gravel, Inc.	1	387,678	510,000	Karg Sand & Gravel Co.	1	11,200	11,200
James Bunnell, Inc.	2	403,089	403,089	Keener Sand & Clay Co.	2	1,930	1,930
Burlington Sand & Gravel Co.	1	9,412	9,412	Kinsman Sand & Gravel Co.	1	147,374	145,550
Canton Aggregate, Div. of Central Allied Enterprises, Inc.	2	613,406	604,650	Kipp's Gravel Co., Inc.	1	115,814	115,814
Carpenter's Excavating	1	318	318	Kirby's Sand & Gravel, Inc.	1	42,347	42,347
Cedar Heights Clay Co., Division of Resco Products, Inc.	1	513	513	L & I Natural Resources, Inc.	1	238,542	238,542
Charlestown Sand & Gravel, Inc.	1	26,007	26,007	L & I Trucking & Construction, Inc.	2	177,553	177,553
Chattin Concrete	1	3,729	7,928	L. & M. Excavators, Inc.	1	10,740	10,740
Chesterhill Stone Co.	1	354,293	325,681	Lake Hope Asphalt, Inc.	1	16,461	35,016
Chesterville Sand & Gravel Co., Inc.	1	93,306	93,306	Lakeside Sand & Gravel Co.	1	267,129	249,547
Chillicothe Sand & Gravel Co.	1	25,1147	25,147	Lancaster Sand & Gravel Co.	1	375,149	329,277
Cochran Transportation Services, Inc.	1	16,800	16,800	Lazy Acre Farms, Inc.	1	31,257	31,257
Cooper Sand & Gravel	1	2,543	2,543	Luburgh, Inc.	1	51,200	105,700
Cox Gravel Co., Inc.	3	257,295	298,979	M. & G. Supply Co.	1	79,029	79,029
Cremeans Concrete & Supply	1	7,098	7,098	Donald Martin Contracting	1	138	138
R. A. Cruise Sand & Gravel, Inc.	1	71,508	71,508	Mason's Sand & Gravel Co.	1	24,639	24,639
Cummins Family Contracting	1	300	300	Massillon Materials, Inc.	1	5,800	5,800
D & W Sand & Gravel	1	10,374	10,374	Massillon Washed Gravel Co.	1	246,136	246,136
Darby Gravel	1	5,650	5,550	Maumee Haulers & Excavating, Inc.	1	117,434	117,434
Davis Sand & Gravel	1	2,871	2,871	Mecco, Inc.	1	208,114	242,020
Demmy Construction, Inc.	1	42,243	42,243	Mechanicsburg Sand & Gravel, Inc.	1	107,176	94,656
Demmy Sand & Gravel	1	8,040	8,040	Meigs County Commissioners	1	8,640	8,640
Dingledine Trucking Service	1	58,942	60,650	Menuet Bros. Sand & Gravel, Inc.	1	115,538	115,538
Dravo Basic Materials Co., Inc.	6	2,611,351	3,040,737	Mesenburg Bros., Inc.	1	8,834	8,834
Dry Creek Gravel Co.	2	378,700	378,700	Mickley Gravel Co.	1	2,204	168
C. E. Duff & Son, Inc.	1	65,141	65,141	Miller Bros. Gravel, Inc.	1	245,047	229,440
Elm Spring Farm	1	3,300	3,300	Miller Sand & Gravel Co.	1	2,620	1,498
M. T. Epling Co.	1	224	224	Miller Sand Co.	1	4,378	4,378
Erie Blacktop, Inc.	1	31,976	31,976	Moore's Excavating Co.	1	91,844	80,151
Erie Sand & Gravel Co.	1 dredger	128,966	128,966	Morrow Gravel Co.	2	363,231	363,231
Ernst Material Service, Inc.	1	7,496	0	Muskingum River Gravel Co.	4	397,750	397,750
Feikert Sand & Gravel, Inc.	1	88,053	88,053	National Lime & Stone Co.	4	461,354	475,000
Fenner Sand & Gravel, Inc.	1	188,000	188,000	Neer's Sand & Gravel	1	133,455	172,068
Fleckenstein Farm Gravel Pit	1	10,503	10,503	Nelson Sand & Gravel, Inc.	1	11,300	11,300
Flesher Sand & Gravel, Inc.	1	30,105	30,105	Newark Asphalt Co.	1	87,948	98,859
				New Carlisle Sand & Gravel Co.	1	438	438

1990 SAND AND GRAVEL COMPANIES WITH SALES OR PRODUCTION—Continued

Company	No. of operations	Sales (tons)	Production (tons)	Company	No. of operations	Sales (tons)	Production (tons)
Newton Asphalt	1	89,396	89,396	Small's Sand & Gravel, Inc.	1	279,150	279,150
Northern Ohio Materials, Inc.	1	375,902	375,902	Sober Sand & Gravel Co.	1	774	664
Northern Ohio Paving Co.	1	255,916	255,916	Soehnen Bros. Sand & Gravel Co.	1	48,500	57,244
Northmont Sand & Gravel Co.	1	42,498	23,522	Solon Excavators Sand & Gravel, Inc.	4	296,695	296,695
North Ridge Materials	1	55,120	55,120	Soltis Sand & Gravel	1	6,705	6,705
Carl E. Oeder & Sons Sand & Gravel	2	406,828	406,828	Southern Ohio Aggregates, Inc.	2	98,500	98,500
Olen Corp.	3	1,584,550	1,584,550	Spring Creek Corp.	2	459,803	459,803
Oneida Sand & Gravel, Inc.	1	91,296	71,468	Spring Industries, Inc.	1	423,167	552,400
Osborne Materials Co.	1 dredger	129,785	129,785	Spring Run Farm & Gravel	1	15,936	15,936
Oster Sand & Gravel, Inc.	2	557,260	557,260	Springfield Sand & Gravel Co.	1	441,184	441,184
Donald Ours	1	6,625	6,625	Standard Slag Co.	4	1,923,799	1,946,253
Partin Sand & Gravel	1	4,300	4,300	Stewart & Reichman, Inc.	1	37,713	37,713
Penry Stone Co.	1	56,192	56,192	Stillwater Sand & Gravel, Inc.	1	102,670	122,800
Phillips Sand & Gravel	1	356,033	356,033	Stocker Sand & Gravel Co.	2	854,494	854,494
Portage Lakes Sand & Gravel Co.	1	240,261	240,261	Stoneco, Inc.	1	295,484	86,325
Prairie Lane Sand & Gravel Co.	1	123,827	123,827	Takacs Excavating	1	2,000	2,000
Precision Sand & Gravel	1	73,251	73,251	Teague Gravel Co., Inc.	1	100,922	100,922
Quality Ready Mix, Inc.	1	36,874	29,584	Tipp Stone Co., Inc.	2	119,265	119,265
R & S, Inc.	1	85,801	85,801	Tri-State Asphalt Products	1	373,452	361,300
Rack Sand, Inc.	1	130,023	130,023	Trout Sand & Gravel Co.	1	42,732	42,732
Rainbow Sand & Gravel, Inc.	1	2,000	2,000	Tuffco Sand & Gravel, Inc.	1	42,974	42,974
Richards & Son, Inc.	1	682,415	682,415	Union Aggregates Co.	1	38,582	29,170
Richard Farms, Inc.	1	18,771	18,771	Union Slag Corp.	2	67,957	61,114
Ries Sand & Gravel	1	8,093	8,133	Valley Materials Co.	1	88,885	88,885
Riverside Sand & Gravel Co., Inc.	1	12,389	12,389	Van Wey Sand & Gravel, Inc.	1	336,188	454,800
Gary Roberts Excavating	1	460	460	Ward Materials, Inc.	1	70,622	68,972
Rogers Group, Inc., dba Norwalk				Don Wartko Construction, Inc.	1	2,049	2,049
Sand & Gravel	1	73,030	89,181	Washington County Engineer	1	27,000	27,000
Rubber City Sand & Gravel Co.	1	154,313	154,313	Watson Gravel, Inc.	4	1,324,677	1,324,677
Rupp Construction, Inc.	1	283,162	283,162	Weber Aggregates	1	13,791	13,791
S & S Aggregate, Inc.	4	444,727	444,727	Weber Sand & Gravel, Inc.	1	254,215	254,215
G. M. Sader Excavating & Paving, Inc.	1	3,384	1,758	Weidle Sand & Gravel, Inc.	2	165,193	165,193
Salt Creek Materials, Inc.	1	1,654	0	Welch Sand & Gravel, Inc.	3	775,221	775,221
Samco, Inc.	1	447,875	447,875	Whitewater Aggregates, Inc.	1	820,820	835,824
Sant Sand & Gravel, Inc.	1	81,367	99,323	Mark Williams Blacktop Co., Inc.	1	40,527	40,527
Schloss Paving Co.	1	75,030	75,030	Wise Gravel	1	7,000	7,000
Scioto Sand & Gravel	1	260	169	Wysong Gravel Co.	2	115,333	115,333
Scioto Valley Resources	1	367,501	365,993	X L Sand & Gravel	1	84,000	84,000
Seaway Sand & Stone, Inc.	2	147,711	147,711	Xenia Sand, Gravel, & Asphalt Co.	1	14,738	14,262
Seville Sand & Gravel, Inc.	1	305,427	305,427	York Road Gravel Co.	1	6,360	6,360
Shamrock Gravel Co.	1	656,244	656,244	Young's Sand & Gravel Co.	2	293,786	333,751
R. W. Sidley, Inc.	2	69,100	75,100	Zink Petroleum Corp., dba State Rte.			
Sidney Sand & Gravel Co.	2	361,003	361,003	416 Sand & Gravel	1	44,097	44,097
Joe Simak & Sons Trucking, Inc.	1	508	332	Zollinger Sand & Gravel Co.	1	157,290	157,290
				TOTAL: 218 companies	287	44,057,557	46,641,588

1990 OHIO DIRECTORY OF LAKE ERIE SAND AND GRAVEL DREDGERS

Name of operator	Permitted dredging areas
Erie Sand & Gravel Co.	Fairport, Vermilion-Lorain Area "A," Vermilion-Lorain Area "B"
Osborne Materials Co.	Fairport, Vermilion-Lorain Area "A," Vermilion-Lorain Area "B"

1990 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Allen	Ward Materials, Inc.	Ward Materials, Inc.	Monroe	sand—asphaltic concrete, filtration, foundry gravel—building, other	An-15
Ashland	Ries Sand & Gravel	Ries Sand & Gravel	Mohican	sand—building, road construction/resurfacing, fill gravel—building, road construction/resurfacing, fill	Ald-9
	Young's Sand & Gravel Co.	Young's Sand & Gravel Co.	Green	sand—building, road construction/resurfacing, other gravel—building, road construction/resurfacing, other	Ald-7
		Young's Sand & Gravel Co.	Green	sand—building, road construction/resurfacing, other gravel—building, road construction/resurfacing, other	Ald-15
Ashtabula	Frye Sand & Gravel, Inc. Kinsman Sand & Gravel Co.	Frye Sand & Gravel, Inc. Kinsman Sand & Gravel Co.	Denmark Wayne	gravel—bank run sand—unspecified gravel—unspecified	Asa-10 Asa-17
	Nelson Sand & Gravel, Inc.	Nelson Sand & Gravel, Inc.	Kingsville	sand—building, road construction/resurfacing gravel—building	Asa-12
	North Ridge Materials	North Ridge Materials	Kingsville	sand—building, asphaltic concrete, road construction/resurfacing gravel—building, asphaltic concrete, road construction/resurfacing, filtration	Asa-18
	R. W. Sidley, Inc.	Conneaut Pit	Kingsville	sand—building, portland cement concrete, filtration, ice control gravel—building, filtration	Asa-15
Athens	Joe Simak & Sons Trucking, Inc.	Penn Line Pit	Richmond	gravel—building, other	Asa-SI
	Black Top Contracting, Inc.	Black Top #1	Rome	sand—asphaltic concrete, road construction/resurfacing gravel—asphaltic concrete, road construction/resurfacing	As-588
	Cochran Transportation Services, Inc.	Cochran Transportation Services, Inc.	Dover	sand—fill gravel—road construction/resurfacing	As-595
	Lake Hope Asphalt, Inc.	Lake Hope Asphalt, Inc.	York	sand—asphaltic concrete, unspecified gravel—asphaltic concrete, unspecified	As-1161
	Weber Aggregates	Weber Aggregates	Rome	sand—road construction/resurfacing gravel—road construction/resurfacing	As-W1
Auglaize	Joseph Sand & Gravel National Lime & Stone Co.	Joseph Sand & Gravel Wapakoneta Plant	Union Union	gravel—fill sand—building, portland cement concrete gravel—portland cement concrete	Ae-23 Ae-30
	Quality Ready Mix, Inc.	Quality Ready Mix, Inc.	Pusheta	sand—portland cement concrete, unspecified gravel—portland cement concrete, unspecified	Ae-16
Belmont	Tri-State Asphalt Products	Tri-State Asphalt Products	Mead	sand—portland cement concrete, asphaltic concrete gravel—portland cement concrete, asphaltic concrete, fill, ice control	Bt-74
Butler	American Aggregates Corp.	Fairfield #711	Fairfield	sand—road construction/resurfacing gravel—road construction/resurfacing	Br-35
		Hamilton #710	St. Clair	sand—road construction/resurfacing gravel—road construction/resurfacing	Br-5
	Broshear Contractors, Inc.	Ross Township Gravel	Ross	sand—unspecified gravel—unspecified	Br-48

Carroll	Dingledine Trucking Service	Dingledine Trucking Service	Milford	sand—portland cement concrete gravel—building, portland cement concrete, road construction/ resurfacing, filtration, base	Br-50
	Dravo Basic Materials Co., Inc.	Ross Plant	Ross	sand—road construction/resurfacing	Br-29
	The Gravel Co.	New Miami Pit	St. Clair	sand—unspecified gravel—unspecified	Br-3
	Indian Creek Sand & Gravel Co. Mecco, Inc.	Indian Creek Sand & Gravel Co. Mecco, Inc.	Ross Lemon	gravel—building, road construction/resurfacing, pipe fill, oversize sand—road construction/resurfacing, filtration	Br-40 Br-15
	Shamrock Gravel Co.	Shamrock Gravel Co.	Madison	gravel—unspecified	Br-52
	Southern Ohio Aggregates, Inc.	Southern Ohio Aggregates, Inc.	St. Clair	sand—unspecified	Br-S ¹
	Watson Gravel, Inc.	Watson Pit	Fairfield	sand—building, portland cement concrete, fill gravel—building, portland cement concrete, road construction/ resurfacing, fill	Br-47
	Weidle Sand & Gravel, Inc.	Weidle Sand & Gravel, Inc.	Madison	sand—building, unspecified	Br-6
	Welch Sand & Gravel, Inc.	Schlichter Pit	Fairfield	gravel—building, unspecified sand—building	Br-38
	Oneida Sand & Gravel, Inc.	Oneida Sand & Gravel, Inc.	Brown	gravel—road construction/resurfacing	Cl-204
Champaign	American Aggregates Corp.	Urbana #410	Urbana	sand—road construction/resurfacing	Cpn-1
	D & W Sand & Gravel	D & W Sand & Gravel	Union	gravel—road construction/resurfacing sand—building, fill	Cpn-21
	Mechanicsburg Sand & Gravel, Inc.	Mechanicsburg Sand & Gravel, Inc.	Union	gravel—building sand—unspecified	Cpn-22
	Moore's Excavating Co.	Moore's Excavating Co.	Salem	gravel—unspecified sand—building	Cpn-20
	American Aggregates Corp.	Fairborn #413	Bethel	sand—road construction/resurfacing	Cl-13
	Demmy Construction, Inc.	Kieffer Pit	Mad River	gravel—road construction/resurfacing sand—building	Cl-501
	Demmy Sand & Gravel Hilltop Basic Resources, Inc. (dba Enon Washed Sand & Gravel Co.)	Demmy Sand & Gravel Enon Washed Sand & Gravel Co.	Mad River Bethel	sand—building gravel—building, portland cement concrete, asphaltic concrete, fill road construction/resurfacing, fill	Cl-502 Cl-3
	Hilltop Basic Resources, Inc.	Fairborn Aggregate Plant	Bethel	sand—building, portland cement concrete, asphaltic concrete	Ge-4 ²
	Springfield Sand & Gravel Co.	Springfield Sand & Gravel Co.	Springfield	gravel—portland cement concrete, asphaltic concrete, fill, base sand—building, portland cement concrete, asphaltic concrete gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing, fill	Cl-25
	Kipp's Gravel Co., Inc.	Kipp's Gravel Co., Inc.	Stoneliok	sand—unspecified gravel—unspecified	Ct-7
Clermont	Beaver Creek Resources, Inc.	Beaver Creek Resources, Inc.	Salem	sand—bank run gravel—bank run	Ca-855
	X L Sand & Gravel	X L Sand & Gravel	Middleton	sand—unspecified gravel—unspecified	Ca-881
Coshocton	William Albert, Inc.	William Albert, Inc.	Franklin	sand—building, road construction/resurfacing, filtration, foundry, unspecified	Cn-828
	Apache Aggregate & Paving Co.	Apache Aggregate & Paving Co.	Keene	gravel—building, road construction/resurfacing, filtration, unspecified sand—asphaltic concrete, road construction/resurfacing gravel—asphaltic concrete, road construction/resurfacing	Cn-783

¹No mine number has been assigned by the Division of Mines.²See also Greene County.

1990 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY—Continued

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Coshocton (cont.)	Boyd Gravel Co.	Boyd Gravel Co.	Bethlehem	sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration, fill gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration, fill	Cn-694
Crawford	Gibson Sand & Gravel Co.	Gibson Sand & Gravel Co.	Jefferson	sand—unspecified gravel—unspecified	Cd-3
Darke	Fourman's Sand & Gravel, Inc.	Fourman's Sand & Gravel, Inc.	Greenville	sand—unspecified gravel—unspecified	Dke-4
Defiance	Tom Hollinger Excavating	Hollinger Gravel Plant	Harrison	gravel—farm ballast	Dke-10
Erie	Hillsdale Sand & Gravel, Inc.	Hillsdale Sand & Gravel, Inc.	Farmer	gravel—road construction/resurfacing	De-2
	Elmer Borchardt, Inc.	Elmer Borchardt, Inc.	Margaretta	sand—fill	Ee-18
	Jarrett Sand Co.	Jarrett Sand Co.	Groton	gravel—building	Ee-29
	Keener Sand & Clay Co.	Huron Plant	Huron	sand—fill	Ee-5
	Mesenburg Bros., Inc.	Mesenburg Bros., Inc.	Milan	sand—foundry	Ee-24
	Miller Sand Co.	Miller Sand Co.	Margaretta	sand—bank run	Ee-28
Fairfield	Paul D. Beery Trucking Co.	Paul D. Beery Trucking Co.	Berne	sand—fill	Fd-14
	Davis Sand & Gravel	Davis Sand & Gravel	Hocking	sand—unspecified gravel—unspecified	Fd-12
	Lancaster Sand & Gravel Co.	Lancaster Sand & Gravel Co.	Berne	gravel—unspecified sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration, fill	Fd-13
Franklin	Agg Rok Materials (Div. of Wapak Sand & Gravel Co.)	Agg Rok Materials	Franklin	sand—building, portland cement concrete, asphaltic concrete, fill	Fn-36
	American Aggregates Corp.	Lockbourne #213	Hamilton	gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing	Fn-23
		Columbus #210	Marion	sand—road construction/resurfacing	Fn-6
	J. P. Sand & Gravel Co.	J. P. Sand & Gravel Co.	Hamilton	gravel—road construction/resurfacing	Fn-52
	L. & M. Excavators, Inc.	Westerville Industrial Park	Blendon	sand—building	Fn-54
	Mason's Sand & Gravel Co.	Mason's Sand & Gravel Co.	Hamilton	gravel—building	Fn-11
	Olen Corp.	Hilliard Plant	Brown	gravel—building sand—building, portland cement concrete, road construction/resurfacing	Fn-43
		Columbus Plant	Hamilton	gravel—building, asphaltic concrete, road construction/resurfacing sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing	Fn-58
Gallia	Cedar Heights Clay Co. Div. of Resco Products, Inc.	Gallia Red Sand	Springfield	gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing	Ga-507 ³
	Cremeans Concrete & Supply M. T. Epling Co.	Cremeans Concrete & Supply M. T. Epling Sand & Gravel Plant	Addison	sand—landscaping	Ga-626
	Keener Sand & Clay Co.	Gallia Plant	Gallipolis	sand—building, fill, bank run	Ga-245
	Donald Ours	Ours Pit	Springfield	gravel—pit run, fill	Ga-507 ³
			Ohio	sand—foundry	Ga-O ⁴
				sand—unspecified gravel—unspecified	
Geauga	Haueter Sand & Gravel, Inc.	Haueter Sand & Gravel, Inc.	Burton, Newbury	gravel—unspecified sand—building, portland cement concrete gravel—road construction/resurfacing, filtration, oversize	Gea-29

Greene	Solon Excavators Sand & Gravel, Inc.	Trethewey	Auburn	sand—building gravel—building	Gea-40
	Soltis Sand & Gravel	Soltis Sand & Gravel	Parkman	sand—fill	Gea-9
	Teague Gravel Co., Inc.	Teague Gravel Pit	Newbury	gravel—bank run sand—building, road construction/resurfacing, nursery use gravel—building, road construction/resurfacing, nursery use	Gea-35
	American Aggregates Corp.	Haines Rd. #419	Beaver Creek	sand—road construction/resurfacing	Ge-32
		Xenia #414	Beaver Creek	gravel—road construction/resurfacing	Ge-33
	Hilltop Basic Resources, Inc.	Spring Valley Gravel #434	Spring Valley	sand—road construction/resurfacing	Ge-42
		Fairborn Aggregate Plant	Bath	gravel—road construction/resurfacing	Ge-45
	Donald Martin Contracting Phillips Sand & Gravel	Donald Martin Contracting Phillips Sand & Gravel	Spring Valley Beaver Creek	sand—building, portland cement concrete, asphaltic concrete gravel—portland cement concrete, asphaltic concrete, fill, base, precast	Ge-40 Ge-36
	Watson Gravel, Inc.	Spring Valley	Spring Valley	gravel—unspecified sand—unspecified gravel—building, portland cement concrete, fill	Ge-38
	Xenia Sand, Gravel, & Asphalt Co.	Xenia Sand, Gravel, & Asphalt Co.	Xenia	gravel—building, portland cement concrete, road construction/ resurfacing sand—building gravel—building	Ge-10
Hamilton	American Aggregates Corp.	Harrison #712	Harrison	sand—road construction/resurfacing	Hmn-37
		Kilby Rd. #713	Whitewater	gravel—road construction/resurfacing	Hmn-AAC ⁴
	Ashcraft Sand & Gravel, Inc. Barrett Paving Materials, Inc.	Ashcraft Sand & Gravel, Inc. Miamitown Sand & Gravel	Whitewater Crosby	gravel—road construction/resurfacing gravel—building, unspecified sand—asphaltic concrete	Hmn-54 Hmn-44
	James Bunnell, Inc.	Newtown Sand & Gravel	Anderson	gravel—asphaltic concrete sand—asphaltic concrete	Hmn-56 ⁶
		James Bunnell, Inc.	Harrison	gravel—asphaltic concrete	Hmn-50
	Dravo Basic Materials Co., Inc.	James Bunnell, Inc.	Whitewater	sand—unspecified gravel—building, portland cement concrete, road construction/ resurfacing, unspecified sand—unspecified	Hmn-59
		Newtown Plant	Anderson	gravel—unspecified sand—road construction/resurfacing, filtration	Hmn-11 ⁷
		Camp Dennison Plant	Symmes	gravel—road construction/resurfacing	Hmn-5
		Cleves Plant	Whitewater	gravel—road construction/resurfacing	Hmn-68
	Harrison Sand & Gravel Co.	Harrison Sand & Gravel Co.	Harrison	sand—road construction/resurfacing gravel—road construction/resurfacing sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration	Hmn-17
Henry	Rack Sand, Inc.	Rack Sand, Inc.	Mill Creek	gravel—building, portland cement concrete, road construction/ resurfacing, filtration sand—unspecified	Hmn-10
	Watson Gravel, Inc.	Harrison Pit	Whitewater	gravel—unspecified sand—building, portland cement concrete, fill	Hmn-60
	Welch Sand & Gravel, Inc.	East Miami Pit	Colerain	sand—building gravel—building	Hmn-48
		Fernald Pit	Crosby	sand—building gravel—building	Hmn-42
	Whitewater Aggregates, Inc.	Whitewater Aggregates, Inc.	Harrison	sand—building gravel—portland cement concrete, unspecified gravel—portland cement concrete, unspecified	Hmn-69
	Gerken Materials, Inc.	Gerken Materials, Inc.	Liberty	sand—road construction/resurfacing	Hy-5

³This mine number has been duplicated by the Division of Mines.⁴No mine number has been assigned by the Division of Mines.⁵See also Clark County.⁶Production only, no sales.⁷Information for Hmn-11 includes information for Hmn-70.

1990 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY—Continued

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Hocking	Hocking Valley Concrete, Inc.	Hocking Valley Concrete, Inc.	Green	sand—portland cement concrete, road construction/resurfacing, filtration, fill gravel—portland cement concrete, road construction/resurfacing, fill	Hg-262
	Muskingum River Gravel Co.	Muskingum River Gravel Co.	Green, Starr	sand—unspecified gravel—unspecified	Hg-301
	Feikert Sand & Gravel, Inc.	Feikert Sand & Gravel, Inc.	Salt Creek	sand—building, portland cement concrete, road construction/resurfacing gravel—building, portland cement concrete, road construction/resurfacing, filtration sand—unspecified gravel—unspecified	Hs-511
	Jones Sand & Gravel Co.	Jones Sand & Gravel Co.	Prairie	gravel—unspecified	Hs-J ³
	Menuet Bros. Sand & Gravel, Inc.	Fair Pit	Hardy	sand—building, portland cement concrete, asphaltic concrete, ice control gravel—building, portland cement concrete, asphaltic concrete, bank run sand—road construction/resurfacing, unspecified gravel—road construction/resurfacing, unspecified	Hs-82
Huron	Spring Run Farm & Gravel	Spring Run Farm & Gravel	Killbuck, Monroe		Hs-96
	Erie Blacktop, Inc.	Erie Blacktop Sand & Gravel Pit	Norwalk	sand—portland cement concrete, fill gravel—fill	Hrn-16
	Rogers Group, Inc. (dba Norwalk Sand & Gravel)	Norwalk Sand & Gravel	Norwalk	sand—building, portland cement concrete, filtration, other gravel—building, asphaltic concrete, landscaping, fill	Hrn-1
	Goodwin Sand & Gravel, Inc.	Goodwin Sand & Gravel, Inc.	Clinton	sand—portland cement concrete, asphaltic concrete, road construction/resurfacing, fill gravel—portland cement concrete, asphaltic concrete, road construction/resurfacing, ice control	Kx-7
	Mickley Gravel Co.	Mickley Gravel Co.	Union	sand—road construction/resurfacing, other gravel—road construction/resurfacing, unspecified	Kx-5
Knox	Olen Corp.	Fredericktown Plant	Morris	sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing gravel—building, asphaltic concrete, road construction/resurfacing	Kx-16
	S & S Aggregate, Inc.	Plant #13	Middlebury	gravel—unspecified	Kx-13
	Sant Sand & Gravel, Inc.	Sant Sand & Gravel, Inc.	Clinton	sand—building, road construction/resurfacing, unspecified gravel—building, road construction/resurfacing, unspecified	Kx-3
	Small's Sand & Gravel, Inc.	Small's Sand & Gravel, Inc.	Harrison	sand—unspecified gravel—unspecified	Kx-15
	R. W. Sidley, Inc.	Painesville Pit	Painesville	sand—portland cement concrete, asphaltic concrete, road construction/resurfacing, ice control gravel—building, filtration	Lke-7
Lawrence	Becky Lane Trucking, Inc. Burlington Sand & Gravel Co.	Becky Lane Sand Burlington Sand & Gravel Co.	Perry Perry	sand—fill sand—fill	Le-430 Le-426
Licking	American Aggregates Corp.	Newark #214	Newark	sand—road construction/resurfacing gravel—road construction/resurfacing	Lg-2
	Dry Creek Gravel Co.	Plant #3	Newton	sand—portland cement concrete, asphaltic concrete, golf course use gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing, fill	Lg-DC ⁸
		Plant #2	Washington	road construction/resurfacing, fill	Lg-31
	Newark Asphalt Co.	Alexandria Pit	St. Albans	sand—building, portland cement concrete, asphaltic concrete gravel—building, road construction/resurfacing	Lg-8
	Gary Roberts Excavating	Gary Roberts Excavating	Madison	sand—asphaltic concrete, road construction/resurfacing gravel—asphaltic concrete, road construction/resurfacing sand—driveway use gravel—driveway use	Lg-504

Logan	Van Wey Sand & Gravel, Inc.	Van Wey Sand & Gravel, Inc.	Newton	sand—building, road construction/resurfacing gravel—building, road construction/resurfacing gravel—bank run, fill	Lg-10
	York Road Gravel Co.	York Road Gravel Co.	Etna		Lg-38
	Cooper Sand & Gravel	Cooper Sand & Gravel	Lake	sand—building gravel—building	Lgn-40
	Cummins Family Contracting	Cummins Family Contracting	Washington	sand—driveway use gravel—driveway use	Lgn-38
	C. E. Duff & Son, Inc.	Duff Sand Co.	Washington Union	sand—building, portland cement concrete sand—unspecified gravel—unspecified	Lgn-31 Lgn-6
Lorain Lucas	Belu & Son Paving, Inc.	Belu Sand Pit	Henrietta	sand—fill	Ln-12
	Atlantic Investment Co.	Atlantic Investment Co.	Spencer	sand—unspecified gravel—unspecified	Ls-AI ⁸
	Maumee Haulers & Excavating, Inc.	Eber Rd. Pit	Mondova Springfield	sand—building sand—unspecified gravel—unspecified	Ls-26 Ls-SS ⁹ Ls-13
Madison	Seaway Sand & Stone, Inc.	Seaway Sand & Stone, Inc.	Swanton	sand—building, construction	Mdn-T ⁸
	Tuffco Sand & Gravel, Inc.	Tuffco Sand & Gravel, Inc.	Darby	sand—unspecified gravel—unspecified	Mn-4
Marion	Penry Stone Co.	Penry Stone Co.	Prospect	sand—unspecified gravel—unspecified	Mn-16
	Scioto Sand & Gravel	Scioto Sand & Gravel	Prospect	sand—filtration gravel—fill	Mn-10
	Union Aggregates Co.	Prospect Sand & Gravel Plant	Prospect	sand—building gravel—other	Ma-20
Medina	Baker Sand, Inc.	Baker Sand, Inc.	Harrisville, Westfield	sand—building, asphaltic concrete, road construction/resurfacing/ fill	Ma-22
	Seville Sand & Gravel, Inc.	Seville Sand & Gravel, Inc.	Harrisville	gravel—road construction/resurfacing sand—building, asphaltic concrete, portland cement concrete gravel—building, road construction/resurfacing	Ms-205 ⁹ Ms-295 Ms-301 Ms-298
Meigs	Dravo Basic Materials Co., Inc.	Apple Grove Plant	Letart	sand gravel	Mi-3
	Humphrey Farms	Vivian Humphrey	Olive	gravel—bank run	Mi-6
	Meigs County Commissioners	Meigs County Pit	Letart	sand—asphaltic concrete, road construction/resurfacing gravel—asphaltic concrete, road construction/resurfacing	Mi-8
	Richards & Son, Inc.	Richards & Son, Inc.	Letart	sand—building, asphaltic concrete gravel—building, asphaltic concrete, road construction/ resurfacing	Mi-T ⁸
	American Aggregates Corp.	Troy Gravel #433	Concord	sand—road construction/resurfacing gravel—road construction/resurfacing	Mi-4
Miami	Barrett Paving Materials, Inc.	Piqua Gravel #430	Springcreek	sand—road construction/resurfacing gravel—road construction/resurfacing	Mi-501
	Fenner Sand & Gravel, Inc.	Tipp City Gravel #435	Monroe	sand—road construction/resurfacing gravel—road construction/resurfacing	Mi-504
	New Carlisle Sand & Gravel Co.	Ticon Corp.	Washington	sand—fill gravel—fill	Mi-12
	Stillwater Sand & Gravel, Inc.	Woodville Concrete Corp.	Newton	sand—unspecified gravel—unspecified	Mi-9
	Tipp Stone Co., Inc.	New Carlisle Sand & Gravel Co.	Bethel	sand—fill gravel—fill	
	Wise Gravel	Stillwater Sand & Gravel, Inc.	Union	sand—building, road construction/resurfacing gravel—building, asphaltic concrete, road construction/ resurfacing	
		Troy	Elizabeth	sand—unspecified gravel—unspecified	
		Wise Gravel	Newberry	sand—farm use gravel—building, farm use, driveway use, fill	

⁸No mine number has been assigned by the Division of Mines.⁹Production only, no sales.

1990 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY—Continued

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Monroe	B & D Paving Co.	B & D Paving Co.	Salem	sand—bank run gravel—bank run	Me-508
	American Aggregates Corp.	Rip Rap Road #416	Wayne	sand—road construction/resurfacing gravel—road construction/resurfacing	My-66
	Broadway Sand & Gravel, Inc.	Broadway Sand & Gravel, Inc.	City of Moraine	sand—building gravel—building	My-65
	Carpenter's Excavating H & H Utilities Co.	Carpenter's Excavating H & H Gravel	City of Moraine Miami	sand—unspecified sand—unspecified	My-67 My-68
	Hilltop Basic Resources, Inc.	West Carrollton Aggregate Plant	Jefferson, Miami	gravel—unspecified sand—building, portland cement concrete, asphaltic concrete	My-19
	Miller Bros. Gravel, Inc.	Miller Bros. Gravel, Inc.	Butler	gravel—portland cement concrete, asphaltic concrete, fill, base sand—building, portland cement concrete, masonry gravel—building, portland cement concrete, road construction/ resurfacing, filtration, other	My-52
	Northmont Sand & Gravel Co.	Northmont Sand & Gravel Co.	Randolph	sand—building gravel—building	My-49
	Partin Sand & Gravel Tipp Stone Co., Inc.	Partin Sand & Gravel Meeker	Wayne Butler	gravel—pit run sand—unspecified	My-55 My-61
	Weidle Sand & Gravel, Inc.	Weidle Sand & Gravel, Inc.	German	gravel—unspecified sand—building, unspecified gravel—building, unspecified	My-41
	Chesterhill Stone Co.	Plant #2	Windsor	sand—portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration gravel—farm use	Mon-588
Morrow	Huck Farms	Huck Farms	Morgan	sand—building, road construction/resurfacing, filtration gravel—building, road construction/resurfacing, filtration, ice control, landscaping	Mon-599
	Chesterville Sand & Gravel Co., Inc.	Chesterville Sand & Gravel Co., Inc.	Chester		Mw-10
Muskingum	Cox Gravel Co., Inc.	Jennings-Lacy	Cass	sand—portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration, ice control	Mum-799
		Prospect	Cass	gravel—portland cement concrete, asphaltic concrete, road construction/resurfacing	Mum-863
		Gilbert Cox	Cass	sand—portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration, ice control gravel—portland cement concrete, asphaltic concrete, road construction/resurfacing, other	Mum-899
	Lazy Acre Farms, Inc.	Lazy Acre Farms, Inc.	Harrison	gravel—portland cement concrete, asphaltic concrete, road construction/resurfacing, filtration, ice control	Mum-261
	Luburgh, Inc.	Luburgh, Inc. Sand Pit	Falls	sand—unspecified gravel—unspecified	Mum-267
	Muskingum River Gravel Co.	Muskingum River Gravel Co.	Wayne	sand—fill, unspecified gravel—unspecified	Mum-228
	Salt Creek Materials, Inc.	Salt Creek Materials, Inc.	Perry	sand—unspecified gravel—unspecified	Mum-269
	American Aggregates Corp.	Circleville #216	Circleville	sand—road construction/resurfacing, unspecified gravel—road construction/resurfacing, unspecified	Pky-1
	Darby Gravel	Darby Gravel	Darby	sand—road construction/resurfacing sand—fill	Pky-7
	William A. Hoffman, Jr.	Hoffman Pit	Wayne	gravel—driveway use sand—unspecified gravel—unspecified	Pky-H ¹⁰
Pickaway	Richards Farms, Inc.	Richards Farms, Inc.	Circleville, Wayne	sand—unspecified gravel—unspecified	Pky-R ¹⁰

Pike	Chattin Concrete Standard Slag Co.	Chattin Concrete Cutlip	Seal Scioto	sand—portland cement concrete gravel—building, filtration sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing sand—unspecified gravel—unspecified	Pke-23 Pke-24
Portage	Valley Materials Co.	Valley Materials Co.	Scioto		Pke-26
	American Sand & Gravel	American Sand & Gravel	Suffield	sand—unspecified gravel—unspecified	Pe-ASG ¹⁰
	Aurora Sand & Gravel, Inc.	Aurora Sand & Gravel, Inc.	Aurora	sand—road construction/resurfacing gravel—road construction/resurfacing	Pe-84
	Beck Sand & Gravel, Inc.	Beck Sand & Gravel, Inc.	Shalersville	sand—unspecified gravel—unspecified	Pe-50
	Karl Brugmann Sand & Gravel, Inc.	Karl Brugmann Sand & Gravel, Inc.	Shalersville	sand—building gravel—building	Pe-15
	Oscar Brugmann Sand & Gravel, Inc.	Oscar Brugmann Sand & Gravel, Inc.	Shalersville	sand—unspecified gravel—unspecified	Pe-9
	Charlestown Sand & Gravel, Inc.	Charlestown Sand & Gravel, Inc.	Charlestown	sand—building, masonry, fill gravel—building, other	Pe-17
	R. A. Cruise Sand & Gravel, Inc.	R. A. Cruise Sand & Gravel, Inc.	Franklin, Ravenna	sand—building, portland cement concrete, asphaltic concrete gravel—building	Pe-45
	Green Oaks Potting Products Hilltop Aggregate, Inc.	Green Oaks Potting Products Hilltop Aggregate, Inc.	Franklin Suffield	sand—building, other sand—building, portland cement concrete, asphaltic concrete, base	Pe-89 Pe-56
	Hugo Sand Co.	Hugo Sand Co.	Franklin	gravel—building sand—building, road construction/resurfacing, unspecified gravel—building, road construction/resurfacing, unspecified	Pe-10
	Jefferson Materials Co.	Howitt	Streetsboro	sand—road construction/resurfacing gravel—road construction/resurfacing	Pe-63
	Karg Sand & Gravel Co. Lakeside Sand & Gravel Co.	Karg Sand & Gravel Co. Lakeside Sand & Gravel Co.	Brimfield Shalersville	sand—fill sand—building, portland cement concrete gravel—building	Pe-83 Pe-40
	Miller Sand & Gravel Co.	Miller Sand & Gravel Co.	Windham	sand—building, fill, base gravel—building, fill, base	Pe-39
	Northern Ohio Materials, Inc.	Northern Ohio Materials, Inc.	Streetsboro	sand—building gravel—building	Pe-85
	Rainbow Sand & Gravel, Inc.	Rainbow Sand & Gravel, Inc.	Shalersville	sand—unspecified gravel—unspecified	Pe-64
Preble	S & S Aggregate, Inc.	Twin Lakes Sand, Inc.	Shalersville, Streetsboro	sand—unspecified gravel—unspecified gravel—unspecified	Pe-59
	Schloss Paving Co.	Twin Lakes Sand, Inc.	Streetsboro	sand—unspecified gravel—unspecified	Pe-67
	Sober Sand & Gravel Co.	Schloss Paving Co.	Mantua	gravel—unspecified sand—asphaltic concrete gravel—asphaltic concrete	Pe-60
	Solon Excavators Sand & Gravel, Inc.	Sober Sand & Gravel Co.	Rootstown	sand—building, fill gravel—building	Pe-18
		Solon Excavators Sand & Gravel, Inc.	Mantua	sand—building gravel—building	Pe-SJ ¹⁰
		Solon Excavators Sand & Gravel, Inc.	Mantua	sand—building gravel—building	Pe-SE ¹⁰
		Solon Excavators Sand & Gravel, Inc.	Shalersville	sand—building gravel—building	Pe-36
	Standard Slag Co.	Shalersville	Shalersville	sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing sand—road construction/resurfacing sand—fill	Pe-68
	Don Wartko Construction, Inc.	Shalersville Portable Don Wartko Construction, Inc.	Shalersville Brimfield		Pe-SS1 ¹⁰ Pe-92
	Southern Ohio Aggregates, Inc.	Southern Ohio Aggregates, Inc.	Gratis, Lanier	sand—unspecified gravel—unspecified	Pre-7

¹⁰No mine number has been assigned by the Division of Mines.

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Preble (cont)	Wysong Gravel Co.	Camden Plant	Somers	sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing	Pre-4
		West Alexandria Plant	Twin	gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing	Pre-6
Richland	Bolin & Bartley, Inc.	Bolin & Bartley Sand & Gravel	Weller	sand—building, asphaltic concrete, unspecified	Rd-20
	D. H. Bowman & Sons, Inc.	D. H. Bowman & Sons, Inc.	Jefferson	gravel—building, unspecified	Rd-4
	Ganges Gravel	Ganges Gravel	Cass	sand—portland cement concrete, asphaltic concrete, fill, pipe bedding	
	John L. Garber Materials, Inc.	John L. Garber Materials, Inc.	Troy	gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing	Rd-18
Ross	Chillicothe Sand & Gravel Co.	Chillicothe Sand & Gravel Co.	Springfield	gravel—unspecified	Rd-14
	Elm Spring Farm	Elm Spring Farm	Union	gravel—building	Rs-27
	Haubeil & Sons Asphalt & Materials, Inc.	Haubeil & Sons Asphalt & Materials, Inc.	Springfield	gravel—portland cement concrete, fill	Rs-26
	Muskingum River Gravel Co.	Muskingum River Gravel Co.	Jefferson	sand—building, road construction/resurfacing	Rs-24
Scioto	E. E. Blair Construction Co.	Blair Pit	Porter	gravel—asphaltic concrete, road construction/resurfacing	Rs-M ¹¹
	Scioto Valley Resources	Scioto Valley Resources Division	Valley	gravel—unspecified	So-98
	Standard Slag Co.	Haverhill	Green	gravel—building	So-100
	Fleckenstein Farm Gravel Pit	Fleckenstein Farm Gravel Pit	McLean	sand—portland cement concrete, masonry	So-79
Shelby	Sidney Sand & Gravel Co.	Milligan & Milligan-Washington Twp. Pit	Washington	gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing	Shy-12
	Spring Creek Corp.	Sidney Sand & Gravel Co.	Orange	sand—fill	Shy-13
	Spring Creek Gravel Co., Inc.	Pence Deposit	Washington	gravel—fill	Shy-S ¹¹
	American Sand & Gravel	American Sand & Gravel	Jackson	gravel—bank run	Shy-11
Stark	Canton Aggregate (Div. of Central Allied Enterprises, Inc.)	Canton Aggregate	Washington	sand—unspecified	Shy-18
	Heiser Sand & Gravel	Heiser Sand & Gravel	Washington	gravel—unspecified	Shy-SQ ¹¹
		Canton Aggregate	Jackson	sand—unspecified	Sk-203
		Heiser Sand & Gravel	Jackson	gravel—unspecified	Sk-689
		Canton Aggregate	Plain	sand—asphaltic concrete, other	Sk-681
		Heiser Sand & Gravel	Jackson	gravel—portland cement concrete, asphaltic concrete, road construction/resurfacing, other	Sk-688

Summit	Massillon Materials, Inc.	Massillon Materials, Inc.	Perry	sand—unspecified gravel—unspecified	Sk-M ¹¹
	Massillon Washed Gravel Co.	Massillon Washed Gravel Co.	Bethlehem	sand—portland cement concrete, road construction/resurfacing	Sk-607
	Northern Ohio Paving Co.	Northern Ohio Paving Co.	Perry	gravel—portland cement concrete, road construction/resurfacing	Sk-N ¹¹
	Oster Sand & Gravel, Inc.	Oster Sand & Gravel, Inc.	Jackson, Perry	sand—unspecified gravel—unspecified	Sk-165
	Alden Sand & Gravel Co.	Alden Sand & Gravel Co.	Northampton	sand—building, asphaltic concrete, ice control, fill gravel—asphaltic concrete, road construction/resurfacing, ice control, fill	St-55
	American Sand & Gravel	American Sand & Gravel	Green	sand—building, other gravel—building, other	St-29
	Flesher Sand & Gravel, Inc.	Flesher Sand & Gravel, Inc.	Norton	sand—unspecified gravel—unspecified	St-52
	M. & G. Supply Co.	Chapel Hill Sand & Gravel	Tallmadge	sand—building, road construction/resurfacing	St-56
	Portage Lakes Sand & Gravel Co.	Portage Lakes Sand & Gravel Co.	Coventry	gravel—building, landscaping, driveway use	St-53
	R & S, Inc.	Copley Sand & Gravel	Copley	sand—building gravel—building	St-54
Trumbull	Riverside Sand & Gravel Co., Inc.	Riverside Sand & Gravel Co., Inc.	Stow, Tallmadge	gravel—building	St-24
	Rubber City Sand & Gravel Co.	Rubber City Sand & Gravel Co.	Green	sand—building, road construction/resurfacing	St-9
	S & S Aggregate, Inc.	Twin Lakes Sand, Inc.	Coventry	gravel—building, portland cement concrete, road construction/resurfacing, filtration, golf course use, sewer construction	St-44
	Samco, Inc.	Springbrook	Mesopotamia	resurfacing, filtration sand—unspecified gravel—unspecified	Tl-12
	Benco Leasing, Inc.	Goshen Sand & Gravel	Goshen	sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing, fill	Ts-1976
	Newton Asphalt	516	Dover	gravel—building, road construction/resurfacing	Ts-2001
	Oster Sand & Gravel, Inc.	Oster Sand & Gravel, Inc.	Lawrence	sand—other gravel—other	Ts-1852
	Soehnlen Bros. Sand & Gravel, Inc.	Soehnlen Bros. Sand & Gravel, Inc.	Wayne	sand—asphaltic concrete, other gravel—asphaltic concrete, other	Ts-1826
	Spring Industries, Inc.	Midvale Pit	Goshen	sand—building, asphaltic concrete, ice control, fill	Ts-1771
	Stewart & Reichman, Inc.	Stewart & Reichman, Inc.	Warwick	gravel—building, asphaltic concrete, road construction/resurfacing, ice control, fill	Ts-111
Warren	Stocker Sand & Gravel Co.	Stocker Sand & Gravel Co.	Clay	sand—building, road construction/resurfacing	Ts-69
	Zink Petroleum Corp. (dba State Rte. 416 Sand & Gravel)	Stocker Sand & Gravel Co.	Clay	sand—building, road construction/resurfacing	Ts-125
	American Aggregates Corp.	State Rte. 416 Sand & Gravel	Goshen	sand—building, road construction/resurfacing	Ts-2018
	D & L Browning Excavating, Inc.	Franklin #714	Franklin	sand—building, road construction/resurfacing	Wan-38
	Ernst Material Service, Inc.	Riverside Sand & Gravel	Salem	sand—road construction/resurfacing	Wan-B ¹¹
	L & I Natural Resources, Inc.	Ernst Material Service, Inc.	Salem	gravel—road construction/resurfacing	Wan-46
		L & I Natural Resources, Inc.	Union	sand—building gravel—building, road construction/resurfacing	Wan-50
				sand—unspecified gravel—unspecified	

¹¹No mine number has been assigned by the Division of Mines.

1990 OHIO DIRECTORY OF SAND AND GRAVEL MINING OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY—Continued

County	Name of operator	Name of pit	Township	Type and principal use	State mine number
Warren (con't)	L & I Trucking & Construction, Inc.	L & I Trucking & Construction, Inc.	Hamilton	sand—unspecified	Wan-8
	Morrow Gravel Co.	Morrow Gravel Co.	Hamilton	gravel—unspecified	Wan-M ¹²
		Morrow Gravel Co.	Salem	sand—unspecified	Wan-M2 ¹²
	Carl E. Oeder & Sons Sand & Gravel	Carl E. Oeder & Sons Sand & Gravel	Union	gravel—unspecified	Wan-41
Washington		Stubbsmill #2	Union	gravel—unspecified	Wan-52
	Watson Gravel, Inc.	Mason Pit	Union	gravel—unspecified	Wan-10
	Atlas Towing Co.	Belpre Bank Run	Belpre	sand—unspecified	Wn-54
	Briggs Sand & Gravel, Inc.	Briggs Sand & Gravel, Inc.	Warren	gravel—unspecified	Wn-508
	Muskingum River Gravel Co.	Plant #2	Grandview	sand—unspecified	Wn-38
	Trout Sand & Gravel Co.	Trout Sand & Gravel Co.	Warren	gravel—unspecified	Wn-510
	Union Slag Corp.	Plant #3	Muskingum	gravel—building	Wn-43
		Plant #2	Muskingum	sand—building	Wn-44
	Washington County Engineer	Washington County Pit	Muskingum	gravel—unspecified	Wn-Wn ¹²
	Mark Williams Blacktop Co., Inc.	Williams Pit #1	Warren	sand—unspecified	Wn-1007
	Prairie Lane Sand & Gravel Co.	Prairie Lane Sand & Gravel Co.	Franklin	sand—building, asphaltic concrete, road construction/resurfacing	We-11
	Rupp Construction, Inc.	Rupp Construction, Inc.	Baughman	sand—building, portland cement concrete, asphaltic concrete, road construction/resurfacing	We-7
	Zollinger Sand & Gravel Co.	Zollinger Sand & Gravel Co.	Chippewa	gravel—building, portland cement concrete, asphaltic concrete, road construction/resurfacing	We-15
	Stoneco, Inc.	South Montpelier	Superior	sand—unspecified	Ws-6
Williams	Takacs Excavating	Takacs Excavating	Superior	gravel—building, road construction/resurfacing, other	Ws-T ¹²
	Weber Sand & Gravel, Inc.	Weber Sand & Gravel, Inc.	St. Joseph	gravel—unspecified	Ws-11
Wood	G. M. Sader Excavating & Paving, Inc.	G. M. Sader Excavating & Paving, Inc.	Plain	sand—building, portland cement concrete, filtration	Wd-13
Wyandot	Kirby's Sand & Gravel, Inc.	Kirby's Sand & Gravel, Inc.	Eden	sand—fill	Wt-17
	National Lime & Stone Co.	Upper Sandusky Plant	Eden	sand—building, asphaltic concrete, road construction/resurfacing, filtration	Wt-15 ¹³
	Precision Sand & Gravel	Precision Sand & Gravel	Crane, Eden	sand—building, portland cement concrete, gravel—portland cement concrete, sand—portland cement concrete	Wt-4

¹²No mine number has been assigned by the Division of Mines.¹³Information for Wt-15 includes information for Wt-5 and Wt-18.

**1990 SANDSTONE/CONGLOMERATE COMPANIES WITH
SALES OR PRODUCTION**

Company	No. of operations	Sales (tons)	Production (tons)
Beaver Creek Resources, Inc.	1	95,057	95,057
Best Sand Corp.	1	486,265	657,820
Briar Hill Stone Co.	7	23,573	19,386
Central Silica Co.	3	382,241	382,241
Cleveland Quarries Co.	2	58,966	58,966
Conotton Valley Quarries Co.	1	1,640	1,640
Gwin Contracting Co.	1	33,398	33,398
Hard Rocks, Inc.	1	23,955	31,680
Kimble Clay & Limestone Co.	1	6,633	6,633
Mesenburg Bros., Inc.	1	7,532	7,532
Riverside Sand & Gravel Co., Inc.	1	38,895	38,895
Schrader Sand & Gravel	1	16,036	28,412
R. W. Sidley, Inc.	1	195,200	287,000
Southern Silica, Inc.	1	273,176	273,176
U.S. Silica Co.	1	29,500	29,500
Waller Bros. Stone Co.	2	28,268	28,268
TOTAL: 16 companies	26	1,700,335	1,979,604



Silica pebbles from R. W. Sidley, Inc., quarry, Geauga County. Date of photo unknown.

1990 OHIO DIRECTORY OF SANDSTONE/CONGLOMERATE MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

County	Name of operator	Name of quarry	Township	Geological unit	Type and principal use	State mine number
Carroll	Conotton Valley Quarries Co.	Conotton Valley Quarries Co.	Lee		crushed or broken stone—riprap dimension stone—finished	CL-102
Columbiana	Beaver Creek Resources, Inc.	Beaver Creek Resources, Inc.	Salem		crushed or broken stone—aggregate, base	Ca-855
Coshocton	Briar Hill Stone Co.	Quarry #26 Quarry #32 Quarry #55 Quarry #18 Quarry #3	Monroe Monroe Monroe New Castle Tiverton	Massillon (Pennsylvanian) Massillon (Pennsylvanian) Massillon (Pennsylvanian) Massillon (Pennsylvanian) Massillon (Pennsylvanian)	dimension stone—rough architectural dimension stone—rough architectural dimension stone—rough architectural dimension stone—rough architectural dimension stone—rough architectural	Cn-13 Cn-686 Cn-815 Cn-685 Cn-659
Erie	Cleveland Quarries Co.	Birmingham Quarry	Florence	Berea (Mississippian)	dimension stone—refractory, rubble, finished, flagging	Ee-21
Geauga	Best Sand Corp.	Best Sand Corp.	Munson	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—foundry sand, glass sand, metallurgical pebble, refractory, rippap, aggregate, fire and furnace sand, polishing/grinding sand, engine sand, frac sand, trap sand, construction, filtration, filler, extender, manufacturing	Gea-3
Holmes	R. W. Sidley, Inc.	Thompson Pit	Thompson	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—foundry sand, metallurgical pebble, refractory, aggregate, engine sand, filtration, sandblasting dimension stone—rough architectural	Gea-1
Huron	Briar Hill Stone Co.	Quarry #31	Knox	Massillon (Pennsylvanian)	dimension stone—rough architectural	Hs-49
Knox	Mesenburg Bros., Inc.	Mesenburg Bros., Inc.	Townsend	Berea (Mississippian)	crushed or broken stone—riprap	Hm-8
Lorain	Briar Hill Stone Co. Central Silica Co.	Quarry #6 Millwood Sand Division	Jefferson Union	Massillon (Pennsylvanian) Black Hand (Mississippian)	dimension stone—rough architectural crushed or broken stone—foundry sand, glass sand, silica flour, engine sand, frac sand, other	Kx-12 Kx-1
Mahoning	Cleveland Quarries Co.	Amherst Quarries	Amherst	Berea (Mississippian)	crushed or broken stone—aggregate dimension stone—refractory, rubble, grindstones, finished, flagging	Ln-3
Perry	Gwin Contracting Co.	Gwin Contracting Co.	Milton	Sharon sandstone (Pennsylvanian)	crushed or broken stone—fractured laminated sand rock	Mg-62
Pike	Central Silica Co.	Central Silica Co.	Hopewell	Massillon (Pennsylvanian)	crushed or broken stone—foundry sand, glass sand, silica flour, frac sand, other	Py-202
Ross	Schrader Sand & Gravel	Glass Rock	Hopewell	Massillon (Pennsylvanian)	crushed or broken stone—foundry sand, glass sand, silica flour, other	Py-344
Scioto	Southern Silica, Inc.	Southern Silica, Inc.	Jackson	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—metallurgical pebble	Pke-31
Summit	Waller Bros. Stone Co.	Inskeep Quarry Crabtree Quarry	Jefferson	Sharon conglomerate (Pennsylvanian)	crushed or broken stone—foundry sand, glass sand, polishing/grinding sand, engine sand, fill, industrial sand	Rs-16
Trumbull	Riverside Sand & Gravel Co., Inc.	Riverside Sand & Gravel Co., Inc.	Rush Morgan, Rush, Union	Buena Vista (Mississippian)	dimension stone—rough construction dimension stone—rough construction	So-48 So-76
Tuscarawas	Hard Rocks, Inc. Kimble Clay & Limestone Co. U.S. Silica Co.	Hard Rocks, Inc. Kimble Clay & Limestone Co. Coxey Works	Kinsman Dover Wayne	Massillon (Pennsylvanian)	crushed or broken stone—aggregate crushed or broken stone—aggregate crushed or broken stone—riprap crushed or broken stone—fire and furnace sand	St-24 Ti-13 Ts-1818 Ts-1660

1990 CLAY COMPANIES

Company	No. of operations	Sales (tons)	Production (tons)
American Olean Tile Co., Inc.	1	8,767	11,034
Athens Hocking Reclamation Center	1	210	93
Belden Brick Co.	5	270,060	270,060
Belville Mining Co., Inc.	1	42,609	42,609
Blue Jay Enterprises	1	34,441	34,441
Bowerston Shale Co.	1	6,336	6,336
Cedar Heights Clay Co.	1	26,837	26,837
Clark Clay Co.	1	5,342	3,845
Claycraft Co.	1	28,275	28,275
Dennis Clay Co.	2	14,170	14,170
East Ohio Limestone Co.	1	143	143
Ferris Coal Co., Inc.	1	56,381	56,381
General Clay Products Corp.	1	26,958	26,958
Hillcrest Coal, Ltd.	1	18,642	18,642
Holmes Limestone Co.	2	31,197	31,197
Kimble Clay & Limestone Co.	1	306,865	306,865
L & M Mineral Co.	2	34,185	34,185
Lafarge Corp.	1	182,530	182,530
Mead Corp.	1	200,000	200,000
Mitchell Transport, Inc.	1	32,000	32,000
Nutter Bros. Coal Co., Inc.	1	50,690	50,690
Sandkuhl Tile Co.	1	4,750	6,407
Soltis Sand & Gravel	1	82	82
Southwestern Portland Cement Co.	1	127,841	127,841
Stone Creek Brick Co.	1	46,594	46,594
White Eagle Mining, Inc.	1	12,000	12,000
Zoar Mining Co.	1	9,948	9,948
TOTAL: 27 companies	34	1,577,853	1,580,163



Carl Crabtree mine in Tionesta clay, Muskingum County, circa 1920.

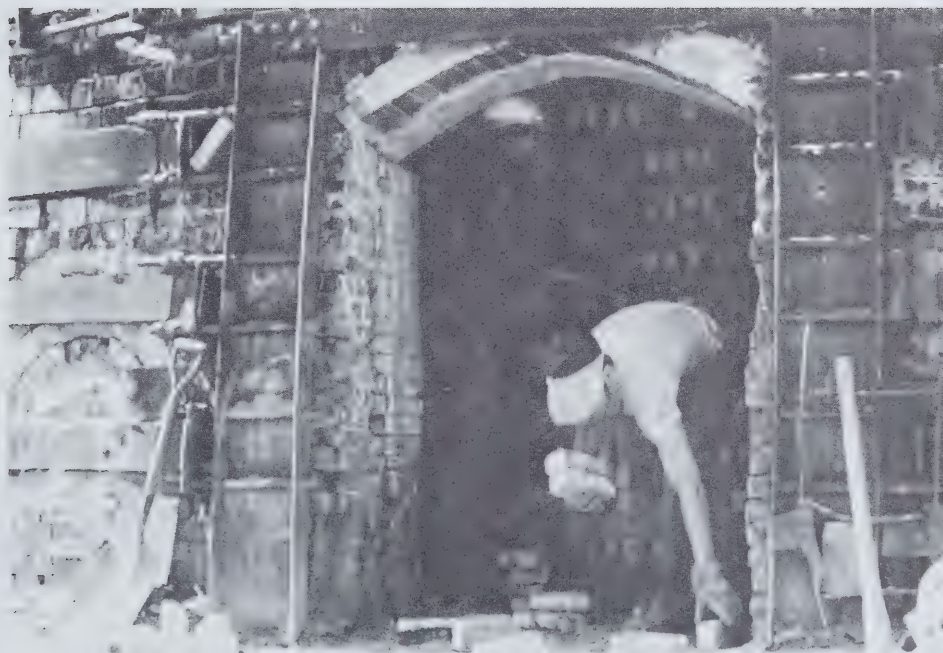
1990 OHIO DIRECTORY OF CLAY-MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

County	Name of operator	Name of mine	Township	Geological unit	Principal use	State mine number
Athens	Athens Hocking Reclamation Center	Athens Hocking Reclamation Center	York	Pleistocene glacial clay	plugging material	As-594
Auglaize	Sandkuhl Tile Co., Inc.	Sandkuhl Tile Co., Inc.	Salem		common clay products	Ae-7
Columbiana	Ferris Coal Co., Inc.	Ferris Coal Co., Inc.	Middleton		unspecified	Ca-505
Geauga	Soltis Sand & Gravel	Soltis Sand & Gravel	Parkman		fill	Gea-9
Greene	Southwestern Portland Cement Co.	Harner	Bath	till	cement manufacture	Ge-44
Hocking	General Clay Products Corp.	General Clay Products Corp.	Falls Gore	No. 5 fire clay (Pennsylvanian)	vitrified products	Hg-205
Holmes	Clark Clay Co.	Clark Clay Co.	Hardy	Putnam Hill (Pennsylvanian)	common clay products	Hs-56
	Holmes Limestone Co.	241 Plant	Hardy	Brookville & Putnam Hill (Pennsylvanian)	common clay products	Hs-67
Jackson	Cedar Heights Clay Co. (Div. of Resco Products, Inc.)	Cedarloo/Jenkins/Greer	Madison	No. 5 clay (Pennsylvanian)	common clay products	Jkn-1007
Lake	Mitchell Transport, Inc.	Mitchell Transport, Inc.	Painesville		unspecified	Lke-M ¹
Lawrence	American Olean Tile Co., Inc.	Jefferys	Elizabeth	No. 5 clay (Pennsylvanian)	common clay products,	Le-440
	Belville Mining Co., Inc.	Belville Mining Co., Inc.	Washington		unspecified	Le-B ¹
	White Eagle Mining, Inc.	White Eagle Mining, Inc.	Elizabeth	No. 5 clay (Pennsylvanian)	refractories	Le-W ¹
Muskingum	Bowerton Shale Co.	Frazeysburg	Jackson	Flint Ridge & Middle Mercer (Pennsylvanian)	vitrified products	Mum-776
	Dennis Clay Co.	Corder Mine	Newton	No. 5 clay (Pennsylvanian)	common clay products	Mum-D ¹
Paulding	Lafarge Corp.	Paulding Quarry	Crane	Detroit River & upper Dundee (Devonian)	cement manufacture	Pg-1
Perry	Dennis Clay Co.	Olson Mine	Harrison	No. 5 clay (Pennsylvanian)	common clay products	Py-296
	Nutter Bros. Coal Co., Inc.	Nutter Bros. Coal Co., Inc.	Monday Creek		common clay products	Py-336
Ross	Mead Corp.	Mead Corp.	Scioto		unspecified	Rs-M ¹
Stark	East Ohio Limestone Co.	East Ohio Limestone Co.	Lake	No. 5 & No. 6 clays (Pennsylvanian)	common clay products	Sk-663
	Hillcrest Coal, Ltd.	Hillcrest Coal, Ltd.	Osnaburg	Brookville (Pennsylvanian)	unspecified	Sk-HC ¹
	Holmes Limestone Co.	Bolvlar Mine	Bethlehem		common clay products	Sk-235
Tuscarawas	Belden Brick Co.	Wallick Pit	Franklin, Wayne	Brookville (Pennsylvanian)	common clay products	Ts-1841
		Moomaw Pit	Sugar Creek	Brookville (Pennsylvanian)	common clay products	Ts-1517
		Belden Pit	Sugar Creek	Brookville & Lower Kittanning (Pennsylvanian)	common clay products	Ts-1646
		Shanesville Pit	Sugar Creek	Brookville (Pennsylvanian)	common clay products	Ts-1939
		Beagle Pit	Sugar Creek	Brookville (Pennsylvanian)	common clay products	Ts-1960
	Blue Jay Enterprises	Swanger	Sandy		common clay products	Ts-520
	Kimble Clay & Limestone Co.	Kimble Clay & Limestone Co.	Dover	Vanport (Pennsylvanian)	common clay products,	Ts-1818
					refractories, construction	
	L & M Mineral Co.	Luikert	Mill		common clay products	Ts-1914
		Spring	Warwick		common clay products	Ts-1982
	Stone Creek Brick Co.	Stone Creek Clay Mine	Jefferson		vitrified products	Ts-1557
	Zoar Mining Co.	Zoar Mining Co.	Sandy		common clay products	Ts-540
Wyandot	Claycraft Co.	Claycraft Plant #1 Clay Pit	Crane	alluvial clay	common clay products	Wt-7

¹No mine number has been assigned by the Division of Mines.

1990 SHALE COMPANIES

Company	No. of operations	Sales (tons)	Production (tons)
Belden Brick Co.	4	229,870	229,870
Blue Jay Enterprises	1	14,231	14,231
Bowerston Shale Co.	2	53,148	53,148
Columbia Portland Cement Corp.	1	12,891	12,891
Dome Minerals, Inc.	1	3,687	3,217
E.M.A.I. Corp	1	93,073	93,073
General Clay Products Corp.	5	91,894	91,894
Glen-Gery Corp.	1	194,920	194,920
Hydraulic Press Brick Co.	1	234,832	233,597
Janson Soil Service, Inc.	1	180	180
Kimble Clay & Limestone Co.	1	333,611	333,611
L & M Mineral Co.	3	50,857	50,857
London Tile Co.	1	1,150	1,150
Richland Moulded Brick Co.	1	20,000	20,000
Stone Creek Brick Co.	1	6,457	6,457
Summitville Tiles, Inc.	1	32,038	32,038
Towne Square Products	1	1,775	1,775
TOTAL: 17 companies	27	1,374,614	1,372,909



Loading bricks into the kiln at Galena Shale Tile & Brick Co., Delaware County. Photo circa 1975.

1990 OHIO DIRECTORY OF SHALE-MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

County	Name of operator	Name of mine	Township	Geological unit	Principal use	State mine number
Ashland	London Tile Co.	Biglow	Ruggles	Bedford (Mississippian)	common clay products	Ald-1
Ashtabula	Janson Soil Service, Inc.	Janson Soil Service, Inc.	Morgan		lightweight aggregate	Asa-14
Columbiana	Dome Minerals, Inc.	Dome Minerals, Inc.	Franklin		common clay products, building bricks	Ca-947
	Summitville Tiles, Inc.	Summitville Tiles, Inc.	Franklin		common clay products	Ca-205
Coshocton	General Clay Products Corp.	Drescher Pit	Crawford	Lower Kittanning (Pennsylvanian)	common clay products	Cn-787
Cuyahoga	Hydraulic Press Brick Co.	Hydraulic Press Brick Co.	City of Independence	Chagrin (Devonian)	lightweight aggregate	Cya-19
Harrison	Bowerston Shale Co.	Bowerston	Monroe	Conemaugh (Pennsylvanian)	vitrified products	Hn-152
Hocking	General Clay Products Corp.	General Clay Products Corp.	Falls Gore	No. 5 fire clay (Pennsylvanian)	vitrified products	Hg-205
	General Clay Products Corp.	General Clay Products Corp.	Starr		unspecified	Hg-G ¹
Holmes	General Clay Products Corp.	Troyer Pit	Clark	Lower Kittanning (Pennsylvanian)	common clay products	Hs-77
Licking	Bowerston Shale Co.	Hanover	Hanover	Logan (Mississippian)	vitrified products	Lg-501
Mahoning	E.M.A.I. Corp.	Quarry #8	Poland	Vanport (Pennsylvanian)	cement manufacture	Mg-608
Marion	Glen-Gery Corp.	Glen-Gery Corp.	Tully	Bedford (Mississippian)	common clay products	Mn-7
Medina	General Clay Products Corp.	General Clay Products Corp.	Wadsworth		common clay products	Ma-6
Muskingum	Columbia Portland Cement Corp.	Lyle Quarry	Newton		cement manufacture	Mum-24
Noble	Towne Square Products	Towne Square Products	Buffalo		common clay products, unspecified	Ne-66
Richland	Richland Moulded Brick Co.	Richland Moulded Brick Co.	Franklin, Weller	Bedford (Mississippian)	common clay products	Rd-R ¹
Tuscarawas	Belden Brick Co.	Wallick Pit	Franklin, Wayne	Brookville & Strasburg (Pennsylvanian)	common clay products	Ts-1841
		Moomaw Pit	Sugar Creek	Brookville & Tionesta (Pennsylvanian)	common clay products	Ts-1517
		Belden Pit	Sugar Creek	Brookville (Pennsylvanian)	common clay products	Ts-1646
		Shanesville Pit	Sugar Creek	Brookville (Pennsylvanian)	common clay products	Ts-1939
		Swanger	Sandy		common clay products	Ts-520
	Blue Jay Enterprises	Kimble Clay & Limestone Co.	Dover	Vanport (Pennsylvanian)	common clay products, construction	Ts-1818
	Kimble Clay & Limestone Co.					
	L & M Mineral Co.	Evans	Mill, Rush, Warwick		common clay products	Ts-1884
		Holmes	Mill, Rush		common clay products	Ts-1981
		Spring	Mill, Warwick		common clay products	Ts-1982
	Stone Creek Brick Co.	Stone Creek Shale Pit	Jefferson		vitrified products	Ts-1558

¹No mine number has been assigned by the Division of Mines.

**1990 OHIO DIRECTORY OF SALT-MINE AND SALT-BRINING-PLANT OPERATORS
REPORTING SALES OR PRODUCTION, BY COUNTY**

County	Name of operator	Name of mine	Township	Geological unit and product	State mine number
Cuyahoga	Akzo Salt, Inc.	Cleveland Mine	City of Cleveland	Salina (Silurian)—rock salt	Cya-30
Lake	Morton International, Inc., Morton Salt Div.	Fairport Mine	Painesville	Salina (Silurian)—rock salt	Lke-6
Licking	R. H. Penick Co.	R. H. Penick Co.	Newark	"Newburg" (Silurian)—natural brine	Lg-45
Summit	Akzo Salt, Inc.	Akzo Salt, Inc.	Coventry	Salina (Silurian)—artificial brine	St-9127
Wayne	Morton International, Inc., Morton Salt Div.	Morton Salt Well Field	Milton	Salina (Silurian)—artificial brine	We-9129

1990 OHIO DIRECTORY OF GYPSUM-MINE OPERATORS REPORTING SALES OR PRODUCTION

County	Name of operator	Name of mine	Township	Geological unit	State mine number
Ottawa	Celotex Corp.	American #2	Portage	Silurian	Oa-2

1990 OHIO DIRECTORY OF PEAT-MINE OPERATORS REPORTING SALES OR PRODUCTION, BY COUNTY

County	Name of operator	Name of mine	Township	Type and principal use	State mine number
Champaign	Sphagnum Moss Peat Farm	Sphagnum Moss Peat Farm	Harrison	mulch, humus—worm culture	Cpn-9
Portage	Green Oaks Potting Products Red Brush Peat Co.	Green Oaks Potting Products Red Brush Peat Co.	Franklin Franklin	mulch unspecified	Pe-89 Pe-61
Williams	Lingvai Peat Co.	Lingvai Peat Co.	Center	mulch	Ws-17

**NUMERICAL INDEX OF OPERATORS OF MINES
SHOWN ON 1990 MINERAL INDUSTRIES MAP OF OHIO, BY COMMODITY**

COAL ● ○

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
3	Belmont	Bt-68	D-0360	Ohio Valley Coal Co.
4	Belmont	Bt-78	IM-733	Cravat Coal Co.
13	Belmont	Bt-147	D-0022	Marietta Coal Co.
16	Belmont	Bt-643	D-0328	Saginaw Mining Co.
19	Belmont	Bt-927	D-0483	Fairpoint Coal Co.
25	Belmont	Bt-992	D-0305	Bannock Coal Co.
27	Belmont	Bt-1074	D-0340	Bannock Coal Co.
36	Belmont	Bt-1102	D-0340	Ohio River Collieries, Inc.
38	Belmont	Bt-1104	D-0088	Marietta Coal Co.
39	Belmont	Bt-1105	D-0333	Marietta Coal Co.
42	Belmont	Bt-1109	D-0270	Marietta Coal Co.
47	Belmont	Bt-1118	D-0396	Cravat Coal Co.
52	Belmont	Bt-1131	D-0507	Cravat Coal Co.
53	Belmont	Bt-1132	D-0515	Marietta Coal Co.
59	Carroll	Cl-17	D-0282	James Bros. Coal Co.
61	Carroll	Cl-162	D-0408	James Bros. Coal Co.
71	Carroll	Cl-231	D-0530	Blum Coal Co.
98	Columbiana	Ca-919	D-0048, D-0412	Commercial Minerals, Inc.
112	Coshocton	Cn-799	D-0023, D-0668	Peabody Coal Co.
122	Coshocton	Cn-814	D-0489	R & F Coal Co.
144	Harrison	Hn-738	D-0376	W. B. Coal Co., Inc.
146	Harrison	Hn-217	D-0440	Varkony Mining Co.
147	Harrison	Hn-218	D-0436	R & F Coal Co.
150	Harrison	Hn-700	D-0826 et al.	Consolidation Coal Co.
155	Harrison	Hn-M	D-0470	R & F Coal Co.
158	Hocking	Hg-295	D-0304	Valley Coal Corp.
161	Holmes	Hs-67	IM-768	Holmes Limestone Co.
162	Holmes, Wayne	Hs-79	IM-656	Holmes Limestone Co.
164	Holmes	Hs-86	D-0193, D-0508	Holmes Limestone Co.
165	Jackson	Jkn-367	IM-774, D-0273, D-0286, D-0594	Waterloo Coal Co., Inc.
175	Jackson	Jkn-1054	D-0205	LaMay Industries, Inc.
178	Jefferson	Jfn-528	D-0247, D-0563, D-0665	Boich Mining Co.
180	Jefferson	Jfn-687	D-0404	Weirton Construction Co.
181	Jefferson	Jfn-703	D-0194, D-0736, D-0843	Zimnox Coal Co.
183	Jefferson	Jfn-720	D-0158	R & F Coal Co.
185	Jefferson	Jfn-780	D-0126	D & L Contractors, Inc.
186	Jefferson	Jfn-784	D-0728	F. & M. Coal Co.
189	Jefferson	Jfn-788	D-0327	Anthony Mining Co., Inc.
190	Jefferson	Jfn-789	D-0307	Anthony Mining Co., Inc.
193	Jefferson	Jfn-1267	D-0167	Ohio Edison Co.
195	Jefferson	Jfn-795	D-0487	Schiappa Coal Co., Inc.
205	Mahoning	Mg-65	D-0374	Thompson Bros. Mining Co.
211	Mahoning	Mg-626	D-0468	East Fairfield Coal Co.
212	Meigs	Ms-293	D-0354, D-0463	Southern Ohio Coal Co.
213	Meigs	Ms-294	D-0355	Southern Ohio Coal Co.
215	Monroe	Me-4	D-0433	Quarto Mining Co. (Subsidiary of Consolidation Coal Co.)
228	Morgan, Mus- kingum, Noble	Ne-41	D-0839 et al.	Central Ohio Coal Co.
231	Noble	Ne-146	D-0343	B & N Coal, Inc.
235	Perry	Py-265	D-0324	Peabody Coal Co.
239	Perry	Py-317	D-0057, D-0085, D-0189	Crooksville Coal Co., Inc.
244	Stark	Sk-196	D-0381	Hillcrest Coal, Ltd.
246	Stark	Sk-208	D-0295	ENZ, Inc.
250	Stark	Sk-221	D-0380	Hillcrest Coal, Ltd.
255	Stark	Sk-663	IM-5	East Ohio Limestone Co.
256	Tuscarawas	Ts-115	D-0190, D-0217, D-0398, D-0715	Empire Coal Co.
258	Tuscarawas	Ts-540	IM-28	Zoar Mining Co.
262	Tuscarawas	Ts-1727	IM-9	Kimble Clay & Limestone Co.
264	Tuscarawas	Ts-1884	IM-6	L & M Mineral Co.
267	Tuscarawas	Ts-1914	D-0701	L & M Mineral Co.
269	Tuscarawas	Ts-1918	D-0236	Red Malcuit, Inc.
270	Tuscarawas	Ts-1919	D-0075	Eberhart Coal, Inc.
292	Tuscarawas	Ts-1964	D-0516	Empire Coal Co.

**NUMERICAL INDEX OF OPERATORS OF MINES
SHOWN ON 1990 MINERAL INDUSTRIES MAP OF OHIO, BY COMMODITY—Continued**

COAL—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
294	Vinton	Vn-163	D-0210	R. A. Eberts Co., Inc.
295	Vinton	Vn-173	D-0719	R & S Coal Co., Inc.
298	Vinton	Vn-623	D-0294	B. & D. Coal, Inc.
299	Vinton	Vn-641	D-0309	Sands Hill Coal Co., Inc.
300	Vinton	Ms-293	D-0354, D-0463	Southern Ohio Coal Co.
309	Belmont	Bt-1143	D-0573	Cravat Coal Co.
321	Columbiana	Ca-938	IM-937	Blum Coal Co.
323	Guernsey	Gy-305	D-0578	R. T. G., Inc.
326	Harrison	Hn-222	D-0587	Huberta Coal Co.
327	Harrison	Hn-223	D-0552	R & F Coal Co.
330	Hocking	Hg-321	D-0531	David Boyle, Inc.
331	Hocking	Hg-V	D-0519, D-0832	Valley Coal Corp.
357	Vinton	Vn-172	D-0445	Benedict, Inc.
360	Carroll	Cl-233	D-0628	Regal Mining, Inc.
363	Stark	Sk-235	IM-945	Holmes Limestone Co.
366	Stark	Sk-236	D-0632	Buckeye-Industrial Mining Co.
370	Belmont	Bt-1149	D-0411	Ohio Coal & Construction Corp.
379	Jackson	Jkn-1061	D-0627	Quality Coal Co.
383	Athens	As-A	D-0557	Avis Coal Co.
391	Belmont	Bt-948	D-0348, D-0762	Bannock Coal Co.
392	Columbiana	Ca-855	IM-891	Beaver Creek Resources, Inc.
399	Harrison, Jefferson	Hn-225	D-0593	R & F Coal Co.
403	Tuscarawas	Ts-1992	D-0685	Eberhart Coal, Inc.
407	Stark	Sk-237	D-0653	Buckeye-Industrial Mining Co.
411	Tuscarawas	Ts-1982	IM-621	L & M Mineral Co.
415	Tuscarawas	Ts-K1	D-0203	Kimble Clay & Limestone Co.
416	Tuscarawas	Ts-K2	D-0413	Kimble Clay & Limestone Co.
417	Tuscarawas	Ts-1983	D-0690	Valley Mining, Inc.
418	Vinton	Vn-182	D-0631	R. A. Eberts Co., Inc.
419	Vinton	Vn-183	D-0633	Benedict, Inc.
420	Vinton	Vn-184	D-0524, D-0609	Benedict, Inc.
422	Vinton	Vn-186	D-0638	R. A. Eberts Co., Inc.
423	Vinton	Vn-187	D-0672	Benedict, Inc.
426	Holmes	Hs-94	D-0699	Miller Mining, Inc.
427	Carroll	Cl-237	D-0710	Carl Noble & Son, Inc.
431	Columbiana	Ca-961	D-0697	Center Mining Co.
433	Tuscarawas	Ts-1991	D-0702	Daron Coal Co., Inc.
435	Columbiana	Ca-963	D-0532	Buckeye-Industrial Mining Co.
441	Columbiana	Ca-348	IM-976	D. & D. Mining Co.
442	Coshocton	Cn-HI	D-0673	R & F Coal Co.
443	Harrison	Hn-227	D-0681	R & F Coal Co.
444	Coshocton	Cn-822	D-0708	R & R Minerals, Inc.
446	Carroll	Cl-235	D-0693	Buckeye-Industrial Mining Co.
447	Carroll	Cl-238	D-0703	Buckeye-Industrial Mining Co.
449	Columbiana	Ca-S	D-0700	Buckeye-Industrial Mining Co.
450	Belmont	Bt-1162	D-0720	Marietta Coal Co.
452	Belmont	Bt-1164	D-0742	Marietta Coal Co.
456	Belmont	Bt-1168	D-0619	R & F Coal Co.
459	Belmont	Bt-1173	D-0675	Ohio Coal & Construction Corp.
460	Belmont	Bt-1175	D-0338	R & F Coal Co.
461	Belmont	Bt-MAR	D-0570	Marietta Coal Co.
462	Carroll	Cl-228	D-0566	Regal Mining, Inc.
463	Carroll	Cl-239	D-0749	Regal Mining, Inc.
465	Carroll	Cl-241	D-0782	Myers Mining
466	Carroll	Cl-242	D-0751	Buckeye-Industrial Mining Co.
467	Carroll	Cl-243	D-0805	Buckeye-Industrial Mining Co.
468	Carroll	Cl-H	D-0791	Horizon Coal Corp.
470	Columbiana	Ca-944	IM-951	Blum Coal Co.
471	Columbiana	Ca-950	D-0768	Blum Coal Co.
472	Columbiana	Ca-951	D-0741	Commercial Minerals, Inc.
473	Columbiana	Ca-952	D-0764	John Glenn Mining
475	Columbiana	Ca-968	D-0760	East Fairfield Coal Co.
477	Coshocton	Cn-824	D-0679	R & F Coal Co.

**NUMERICAL INDEX OF OPERATORS OF MINES
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COAL—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
479	Coshocton	Cn-826	D-0770	Miller Mining, Inc.
482	Harrison	Hn-236	D-0436	R & F Coal Co.
483	Hocking	Hg-324	D-0754	Hocking Valley Mining
484	Hocking	Hg-325	D-0890	Tri-State Coal Sales, Inc.
485	Holmes	Hs-92	D-0624	Holmes Limestone Co.
489	Jefferson	Jfn-813	D-0740	Valley Mining, Inc.
491	Lawrence	Le-450	D-0746	Belville Mining Co., Inc.
493	Noble	Ne-1008	D-0706	B & N Coal, Inc.
494	Noble	Ne-149	D-0785, D-0786	B & N Coal, Inc.
495	Noble	Ne-150	D-0787	B & N Coal, Inc.
497	Perry	Py-340	D-0783	Buckingham Mining & Reclamation, Inc.
499	Tuscarawas	Ts-197	D-0802	Miller Mining, Inc.
501	Tuscarawas	Ts-1995	D-0718	Horizon Coal Corp.
504	Tuscarawas	Ts-1999	D-0738	Valley Mining, Inc.
505	Tuscarawas	Ts-2000	D-0744	J D Mining, Inc.
506	Tuscarawas	Ts-2002	D-0779	Miller Mining, Inc.
508	Tuscarawas	Ts-DW	D-0792	R & F Coal Co.
509	Tuscarawas	Ts-K3	D-0729	Kimble Clay & Limestone Co.
510	Tuscarawas	Ts-2007	D-0737	Red Malcuit, Inc.
511	Vinton	Vn-188	D-0761	Quality Coal Co.
512	Vinton	Vn-189	D-0766	McArthur Lumber & Post Co., Inc.
513	Vinton	Vn-S	D-0793	Sands Hill Coal Co., Inc.
514	Noble, Washington	Ne-151	D-0807	B & N Coal, Inc.
517	Belmont	Bt-1177	D-0776	Marietta Coal Co.
519	Belmont	Bt-1179	D-0840	K.C.C.I.
522	Belmont	Bt-1182	D-0854	R & F Coal Co.
523	Belmont	Bt-1183	D-0845	Marietta Coal Co.
524	Belmont	Bt-1184	D-0799	Joyce Coal Co., Inc.
525	Belmont	Bt-146	D-0267	Cravat Coal Co.
526	Carroll	Cl-244	D-0814	Regal Mining, Inc.
527	Carroll	Cl-245	D-0848	Blum Coal Co.
528	Columbiana	Ca-972	D-0821	Kelly Coal Co.
529	Columbiana	Ca-964, Ca-978	D-0874	Buckeye-Industrial Mining Co.
531	Coshocton	Cn-A	D-0831	Algernon Coal Development Co., Inc.
534	Guernsey	Gy-310	D-0842	Empire Coal Co.
536	Harrison	Hn-747	D-0835	Sunnydale Mining Co.
537	Harrison	Hn-MN	D-0772	R & F Coal Co.
538	Holmes	Hs-97	D-0775	Holmes Limestone Co.
539	Jackson	Jkn-1064	D-0732	Stewart Coal Co.
540	Jackson	Jkn-E	D-0695	Elk Coal, Inc.
541	Jackson	Jkn-SH	D-0861	Sands Hill Coal Co., Inc.
542	Jefferson	Jfn-814	D-0180	Ohio Coal & Construction Corp.
543	Jefferson	Jfn-816	D-0825	C L A Coal Co.
544	Jefferson	Jfn-817	D-0860	R & F Coal Co.
545	Jefferson	Jfn-P2	D-0798	R & F Coal Co.
546	Lawrence	Le-451	D-0726	Waterloo Coal Co., Inc.
547	Muskingum	Gy-308	D-0724	Thompson Mining Co.
551	Noble	Ne-152	D-0859	King Quarries, Inc.
552	Perry	Py-335	D-0615	Crooksville Coal Co., Inc.
555	Tuscarawas	Ts-2005	D-0769	Valley Mining, Inc.
556	Tuscarawas	Ts-2006	D-0800	R. & E. Coal Co.
557	Tuscarawas	Ts-2008	D-0833	Miller Mining, Inc.
558	Tuscarawas	Ts-2009	D-0811	Miller Mining, Inc.
559	Tuscarawas	Ts-2010	D-0849	Miller Mining, Inc.
560	Tuscarawas	Ts-2011	D-0822	Valley Mining, Inc.
561	Tuscarawas	Ts-J	D-0837	Horizon Coal Corp.
562	Tuscarawas	Ts-JD	D-0858	J D Mining, Inc.
563	Vinton	Vn-B	D-0836	B. & D. Coal, Inc.
564	Vinton	Vn-BD	D-0207	B. & D. Coal, Inc.
565	Coshocton	Cn-832	D-0589, D-0688, D-0856	Holmes Limestone Co.
566	Athens	As-AC	D-0841	Avis Coal Co.
567	Belmont	Bt-1186	D-0877	Ohio Coal & Construction Corp.

**NUMERICAL INDEX OF OPERATORS OF MINES
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COAL—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
568	Belmont	Bt-1188	D-0908	R & F Coal Co.
569	Belmont	Bt-1189	D-0914	Bannock Coal Co.
570	Belmont	Bt-771	D-0771	Marietta Coal Co.
571	Belmont	Bt-F	D-0847	Fairpoint Coal Co.
572	Belmont	Bt-RF	D-0862	R & F Coal Co.
573	Carroll	Cl-R	D-0902	Regal Mining, Inc.
574	Columbiana	Ca-977	D-0851	Buckeye-Industrial Mining Co.
575	Coshocton	Cn-831	D-0870	Oxford Mining Co.
576	Coshocton	Cn-NE	D-0618	Algernon Coal Development Co., Inc.
577	Coshocton	Cn-RF	D-0689	R & F Coal Co.
578	Coshocton	Cn-RR	D-0872	R & R Minerals, Inc.
579	Coshocton	Cn-238	D-0526	Oxford Mining Co.
580	Harrison	Hn-710	D-0426	Harrison Mining Corp.
581	Harrison	Hn-748	D-0797	R & F Coal Co.
582	Harrison	Hn-750	D-0901	Valley Mining, Inc.
583	Hocking	Hg-C	D-0864	Crooksville Coal Co., Inc.
584	Jackson	Jkn-1065	D-0887	Elk Coal Co.
585	Jackson	Jkn-580	D-0622	Davis Coal Co.
586	Jefferson	Jfn-820	D-0894	D & L Contractors, Inc.
587	Muskingum	Mum-900	D-0882	Sands Mining Corp.
588	Muskingum	Mum-901	D-0898	Oxford Mining Co.
589	Noble	Ne-153	D-0819	Cravat Coal Co.
590	Perry	Py-338	IM-1092	Dennis Clay Co.
591	Perry	Py-342	D-0863	Buckingham Mining & Reclamation, Inc.
592	Stark	Sk-H	D-0650	Holmes Limestone Co.
593	Stark	Sk-HL	D-0865	Holmes Limestone Co.
594	Tuscarawas	Ts-2012	D-0869	Fairpoint Coal Co.
595	Tuscarawas	Ts-2014	D-0868	Valley Mining, Inc.
596	Tuscarawas	Ts-2015	D-0866	Empire Coal Co.
597	Tuscarawas	Ts-2017	D-0660	Holmes Limestone Co.
598	Tuscarawas	Ts-2019	D-0852	Kimble Clay & Limestone Co.
599	Tuscarawas	Ts-2020	D-0895	Miller Mining, Inc.
600	Tuscarawas	Ts-2022	D-0878	Kimble Clay & Limestone Co.
601	Tuscarawas	Ts-2023	D-0796	Holmes Limestone Co.
602	Vinton	Vn-191	D-0867	Quality Coal Co.

COAL-PREPARATION PLANTS

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
1	Belmont	Bt-108		R & F Coal Co.
2	Belmont	Bt-643	D-0328	Saginaw Mining Co.
3	Belmont	Bt-936	D-0216	Marietta Coal Co.
4	Belmont	Bt-68	D-0360	Ohio Valley Coal Co.
5	Columbiana	Ca-879	D-0228	Buckeye-Industrial Mining Co.
6	Columbiana	Ca-892	D-0599	C & E Coal, Inc.
7	Coshocton	Cn-810		Conesville Coal Preparation Co.
8	Harrison	Hn-212	D-0192	Consolidation Coal Co.
9	Jackson	Jkn-1055	D-0347	Sands Hill Coal Co., Inc.
10	Jackson	Jkn-367	D-0285	Waterloo Coal Co., Inc.
12	Jefferson	Jfn-647	D-0492	Ohio Coal & Construction Corp.
13	Mahoning	Mg-623	D-0214	East Fairfield Coal Co.
14	Meigs	Ms-293	D-0354	Southern Ohio Coal Co.
15	Monroe	Me-4	D-0422	Quarto Mining Co. (subsidiary of Consolidation Coal Co.)
16	Morgan	Ne-41	D-0420	Central Ohio Coal Co.
17	Perry	Py-248	D-0325	Peabody Coal Co.
18	Perry	Py-317	D-0248	Crooksville Coal Co., Inc.
19	Tuscarawas	Ts-115	D-0199	Empire Coal Co.
20	Tuscarawas	Ts-1938	D-0381	Central Fuel Co.
21	Tuscarawas	Ts-1942	D-0287	Horizon Coal Corp.

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COAL-PREPARATION PLANTS—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
22	Vinton	Vn-145	D-0159	Benedict, Inc.
23	Vinton	Vn-178	D-0185	Jaymar Coal Co.
24	Vinton	Vn-641	D-0169	Sands Hill Coal Co., Inc.
26	Belmont	Bt-878	D-0230	Cravat Coal Co.
27	Wayne	Hs-79	D-0283	Holmes Limestone Co.
28	Muskingum	Mum-239	D-0428	Sands Mining Corp.

LIMESTONE/DOLOMITE ■

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
1	Adams	Ads-1	IM-237	Davon, Inc.
2	Adams	Ads-6	IM-659	Standard Slag Co.
3	Allen	An-1	IM-485	Bluffton Stone Co.
4	Allen	An-2	IM-540	National Lime & Stone Co.
5	Allen	An-3	IM-484	National Lime & Stone Co.
6	Allen	An-11	IM-541	National Lime & Stone Co.
7	Allen	An-4	IM-491	Suever Stone Co., Inc.
9	Athens	As-533	IM-17	R. A. Eberts Co., Inc.
10	Auglaize	Ae-31	IM-744	Con-Ag, Inc.
11	Auglaize	Ae-10	IM-486	National Lime & Stone Co.
12	Belmont	Bt-716	IM-1	Ayers Limestone Quarry, Inc.
13	Belmont	Bt-119	IM-733	Cravat Coal Co.
14	Brown	Bn-1		Brown County Rock Crusher
15	Carroll	Cl-183	IM-7	Puskarich Limestone Co.
16	Clark	Ck-1	IM-373	American Aggregates Corp.
17	Clinton	Cln-1	IM-241	Melvin Stone Co.
18	Crawford	Cd-1	IM-404	National Lime & Stone Co.
19	Darke	Dke-1	IM-362	American Aggregates Corp.
20	Delaware	Del-4	IM-262	American Aggregates Corp.
21	Delaware	Del-5	IM-207	National Lime & Stone Co.
22	Delaware	Del-3	IM-327	Owens Stone Co., Inc. (dba Delaware County Materials)
23	Delaware	Del-2	IM-299	Penry Stone Co.
24	Erie	Ee-27	IM-608	Erie Blacktop, Inc.
25	Erie	Ee-11	IM-263	Rogers Group, Inc. (dba Sandusky Crushed Stone Co.)
26	Erie	Ee-1	IM-310	Wagner Quarries Co.
27	Fayette	Fe-2	IM-169	American Aggregates Corp.
28	Fayette	Fe-1	IM-831	Melvin Stone Co.
30	Franklin	Fn-2	IM-261	American Aggregates Corp.
31	Franklin	Fn-53	IM-185	American Aggregates Corp.
32	Greene	Ge-17	IM-435	American Aggregates Corp.
33	Clark, Greene	Ge-1	IM-393	Southwestern Portland Cement Co.
34	Greene	Ge-9	IM-364	Southwestern Portland Cement Co.
35	Hancock	Hk-1	IM-483	National Lime & Stone Co.
37	Hancock	Hk-2	IM-439	Tarbox-McCall Stone Co. (Division of Hancock Ready Mix, Inc.)
38	Hardin	Hdn-2	IM-443	Hardin Quarry Co., Inc.
41	Highland	Hd-2	IM-230	Davon, Inc.
42	Highland	Hd-3	IM-253	Ohio Asphaltic Limestone Corp.
43	Highland	Hd-4	IM-406	Marshall Quarry, Inc.
44	Holmes	Hs-67	IM-768	Holmes Limestone Co.
45	Holmes, Wayne	Hs-79	IM-656	Holmes Limestone Co.
47	Jackson	Jkn-367	IM-774, D-0273, D-0286, D-0594	Waterloo Coal Co., Inc.
49	Logan	Lgn-1	IM-574	Connolly Construction Co., Inc.
50	Logan	Lgn-15	IM-453	C. E. Duff & Son, Inc.
51	Logan	Lgn-2	IM-494	Northwood Stone & Asphalt Co.
52	Lucas	Ls-1	IM-575	The France Stone Co.
53	Lucas	Ls-3	IM-580	The France Stone Co.
54	Lucas	Ls-2	IM-503	Stoneco, Inc.
56	Mahoning	Mg-54	IM-93	Honey Creek Stone Co.

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LIMESTONE/DOLOMITE—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
57	Mahoning	Mg-608	IM-4	E.M.A.I. Corp.
59	Marion	Mn-2	IM-423	J. M. Hamilton & Sons Co., Inc.
60	Marion	Mn-3	IM-168	National Lime & Stone Co.
61	Marion	Mn-1	IM-250	Tri-County Limestone Co.
62	Mercer	Mr-1	IM-592	Stoneco, Inc.
63	Mercer	Mr-2	IM-430	S & S Aggregate, Inc.
64	Miami	Mi-1	IM-382	Piqua Materials, Inc.
65	Miami	Mi-16	IM-414	Gregory Stone Co., Inc.
66	Miami	Mi-502	IM-414	Barrett Paving Materials, Inc.
67	Miami	Mi-10	IM-335	C. F. Poepelman, Inc.
69	Monroe	Me-501	IM-76	Christman Quarry
70	Montgomery	My-1	IM-374	American Aggregates Corp.
71	Montgomery	My-23	IM-368	American Aggregates Corp.
72	Montgomery	My-58	IM-330	Southwestern Portland Cement Co.
73	Morgan	Mon-600	IM-281	Central Ohio Coal Co.
75	Muskingum	Mum-106	IM-297	Chesterhill Stone Co.
76	Muskingum	Mum-24	IM-830	Columbia Portland Cement Corp.
78	Muskingum	Mum-104	IM-277	Sidwell Bros., Inc.
79	Noble	Ne-106	IM-85	King Limestone, Inc.
80	Monroe, Noble	Ne-86	IM-70	Zerger's Quarry
82	Ottawa	Oa-6	IM-296	Edward Kraemer & Sons, Inc.
83	Ottawa	Oa-14	IM-320	Stoneco, Inc.
84	Ottawa	Oa-7	IM-440	Standard Slag Co.
85	Ottawa	Oa-1	IM-292	GenLime Group, L. P.
86	Paulding	Pg-7		The France Stone Co.
87	Paulding	Pg-1	IM-513	Lafarge Corp.
88	Paulding	Pg-2	IM-481	Stoneco, Inc.
89	Perry	Py-235	IM-11, IM-515	Maxville Quarries, Inc.
91	Pike	Pke-13	IM-213	Latham Limestone, Inc.
92	Pickaway	Pky-4	IM-209	Melvin Stone Co.
95	Preble	Pre-5	IM-447	Wysong Stone Co.
98	Putnam	Pm-2	IM-570	Putnam Stone Co.
101	Sandusky	Sy-5	IM-259	Gotttron Bros. Co.
102	Sandusky	Sy-1	IM-537	Martin Marietta Magnesia Specialties, Inc.
103	Sandusky	Sy-4	IM-381	Stetley Quarry Products U.S., Inc., Ohio Lime Co.
104	Sandusky	Sy-3	IM-282	Stetley Quarry Products U.S., Inc., Ohio Lime Co.
106	Seneca	Sa-2	IM-352	Maple Grove Stone Co.
107	Seneca	Sa-1	IM-347	The France Stone Co.
108	Seneca	Sa-3	IM-349	The France Stone Co.
109	Seneca	Sa-8	IM-313	North Shore Stone Quarries, Inc.
110	Shelby	Shy-6	IM-389	Miami River Stone Co.
111	Shelby	Shy-16	IM-411	Sidney Sand & Gravel Co.
112	Shelby	Shy-15	IM-387	Spring Creek Corp.
113	Stark	Sk-663	IM-5	East Ohio Limestone Co.
117	Tuscarawas	Ts-1818	IM-9	Kimble Clay & Limestone Co.
118	Tuscarawas	Ts-1928	IM-98	Sugarcreek Clay & Limestone, Inc.
119	Union	Un-1	IM-208	L. G. Rockhold & Sons, Inc.
120	Union	Un-2	IM-236	Union Aggregates Co.
121	Van Wert	Vt-3	IM-495	Stoneco, Inc.
122	Van Wert	Vt-7	IM-642	Ridge Township Quarry
123	Van Wert	Vt-1	IM-500	Suever Stone Co., Inc.
124	Vinton	Vn-174	D-0309	G & M Supply, Inc. (dba Clinton Stone, Inc.)
125	Warren	Wan-35	IM-112	American Aggregates Corp.
129	Wood	Wd-5	IM-473	The France Stone Co.
130	Wood	Wd-1	IM-548	MacRitchie Materials, Inc.
131	Wood	Wd-6	IM-480	Stoneco, Inc.
132	Wood	Wd-11	IM-475	Stoneco, Inc.
133	Wyandot	Wt-3	IM-298	McCarthy Stone Quarry
134	Wyandot	Wt-1	IM-405	National Lime & Stone Co.
135	Wyandot	Wt-8	IM-273	Wyandot Dolomite, Inc.
138	Noble	Ne-147	IM-921	Central Ohio Coal Co.
142	Greene	Ge-25	IM-437	American Aggregates Corp.
143	Montgomery	My-32	IM-1012	American Aggregates Corp.
144	Muskingum	Mum-269	IM-1009	Salt Creek Materials, Inc.

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SHOWN ON 1990 MINERAL INDUSTRIES MAP OF OHIO, BY COMMODITY—Continued**

LIMESTONE/DOLOMITE—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
145	Erie	Ee-31	IM-1044	Wagner Quarries Co.
146	Coshocton	Cn-830	IM-1049	Sidwell Bros., Inc.
147	Guernsey, Muskingum	Gy-309	IM-1030	King Limestone, Inc.
148	Vinton	Vn-190	D-0761	Quality Stone Co.
149	Hancock	Hk-7	IM-1002	National Lime & Stone Co.
150	Belmont	Bt-1126	IM-802	Ohio Coal & Construction Corp.
151	Belmont	Bt-L	IM-1093	Lakeland Construction
152	Belmont	Bt-1109	IM-1089	Widmor Coal Co.
153	Coshocton	Cn-A	IM-1011	All Stone Co.
154	Franklin	Fn-43	IM-188	Olen Corp.
155	Greene	Ge-45	IM-364	American Aggregates Corp.
156	Hardin	Hdn-S	IM-1034	Standard Slag Co.
157	Holmes	Hs-H	IM-1104	Holmes Limestone Co.
158	Jackson	Jkn-SH	IM-1068	Sands Hill Coal Co., Inc.
159	Lawrence	Le-B	IM-1072	Belville Mining Co., Inc.
160	Lucas	Ls-12	IM-953	Atlas Stone Co.
161	Mahoning	Mg-629	IM-1008	Petersburg Stone Co.
161	Mahoning	Mg-B	IM-1008	Ray Blum Mining
162	Mahoning	Mg-EM	IM-1056	E.M.A.I. Corp.
163	Monroe	Me-C	IM-1088	Christman Quarry
164	Monroe	Me-509	IM-1094	Rubel Quarry, Inc.
165	Morgan	Mon-C	IM-1010	Central Ohio Coal Co.
166	Muskingum	Ne-C	D-0820	Central Ohio Coal Co.
167	Noble	Ne-S	IM-913	Sharon Stone Co.
168	Perry	Py-343	IM-1061	Maxville Quarries, Inc.
169	Tuscarawas	Ts-2024	IM-1087	Green Basin Coal, Inc.

SAND AND GRAVEL DREDGING OPERATION ▲

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
1		Ee-D		Erie Sand & Gravel Co.
2		Lke-D		Osborne Materials Co.

SAND AND GRAVEL ▲

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
2	Allen	An-15	IM-721	Ward Materials, Inc.
6	Ashland	Ald-9	IM-745	Ries Sand & Gravel
8	Ashland	Ald-7	IM-392	Young's Sand & Gravel Co.
9	Ashtabula	Asa-10	IM-198	Frye Sand & Gravel, Inc.
10	Ashtabula	Asa-14	IM-563	Janson Soil Service, Inc.
11	Ashtabula	Asa-17	IM-886	Kinsman Sand & Gravel Co.
14	Ashtabula	Asa-12	IM-911	Nelson Sand & Gravel, Inc.
15	Ashtabula	Asa-15	IM-783	R. W. Sidley, Inc.
19	Athens	As-588	IM-630	Black Top Contracting, Inc.
21	Athens	As-1161	IM-97	Lake Hope Asphalt, Inc.
23	Auglaize	Ae-23	IM-508	Joseph Sand & Gravel
24	Auglaize	Ae-30	IM-598	National Lime & Stone Co.
25	Auglaize	Ae-16	IM-595	Quality Ready Mix, Inc.
26	Belmont	Bt-74	IM-288	Tri-State Asphalt Products
28	Butler	Br-36	IM-649	V. I. P. Contractors, Inc.
29	Butler	Br-5	IM-153	American Aggregates Corp.
30	Butler	Br-35	IM-200	American Aggregates Corp.
31	Butler	Br-48	IM-562	Broshear Contractors, Inc.

NUMERICAL INDEX OF OPERATORS OF MINES
SHOWN ON 1990 MINERAL INDUSTRIES MAP OF OHIO, BY COMMODITY—Continued

SAND AND GRAVEL—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
32	Butler	Br-50	IM-739	Dingledine Trucking Service
33	Butler	Br-14	IM-147	Dravo Basic Materials Co., Inc.
34	Butler	Br-29	IM-149	Dravo Basic Materials Co., Inc.
37	Butler	Br-40	IM-493	Indian Creek Sand & Gravel Co.
38	Butler	Br-52	IM-814	Shamrock Gravel Co.
39	Butler	Br-15	IM-316	Mecco, Inc.
41	Butler	Br-6	IM-177	Weidle Sand & Gravel, Inc.
42	Butler	Br-3	IM-719	The Gravel Co.
44	Butler	Br-47	IM-111	Watson Gravel, Inc.
45	Butler	Br-38	IM-218	Welch Sand & Gravel, Inc.
47	Carroll	Cl-204	IM-554	Oneida Sand & Gravel, Inc.
48	Champaign	Cpn-1	IM-371	American Aggregates Corp.
49	Champaign	Cpn-21	IM-616	D & W Sand & Gravel
50	Champaign	Cpn-22	IM-889	Mechanicsburg Sand & Gravel, Inc.
51	Champaign	Cpn-20	IM-482	Moore's Excavating Co.
52	Clark	Ck-13	IM-366	American Aggregates Corp.
54	Clark	Ck-502	IM-375	Demmy Sand & Gravel
57	Clark	Ck-3	IM-463	Hilltop Basic Resources, Inc. (dba Enon Washed Sand & Gravel Co.)
58	Clark	Ck-25	IM-358	Springfield Sand & Gravel Co.
59	Clermont	Ct-9	IM-526	Barrett Paving Materials, Inc.
61	Clermont	Ct-7	IM-432	Kipp's Gravel Co., Inc.
64	Columbiana	Ca-855	IM-891	Beaver Creek Resources, Inc.
68	Columbiana	Ca-881	IM-611	X L Sand & Gravel
69	Coshocton	Cn-718	IM-227	Apache Aggregate & Paving Co.
70	Coshocton	Cn-783	IM-717	Apache Aggregate & Paving Co.
71	Coshocton	Cn-694	IM-293	Boyd Gravel Co.
72	Coshocton	Cn-624	IM-243	Spring Industries, Inc.
75	Crawford	Cd-3	IM-693	Gibson Sand & Gravel Co.
80	Darke	Dke-4	IM-433	Fouremans Sand & Gravel, Inc.
81	Darke	Dke-10	IM-326	Tom Hollinger Excavating
82	Defiance	De-2	IM-765	Hillsdale Sand & Gravel, Inc.
83	Erie	Ee-18	IM-676	Elmer Borchardt, Inc.
84	Erie	Ee-29		Jarrett Sand Co.
85	Erie	Ee-5		Keener Sand & Clay Co.
86	Erie	Ee-24	IM-915	Mesenburg Bros., Inc.
87	Erie	Ee-28	IM-601	Miller Sand Co.
91	Fairfield	Fd-12	IM-451	Davis Sand & Gravel
92	Fairfield	Fd-13	IM-848	Lancaster Sand & Gravel Co.
94	Franklin	Fn-36	IM-302	Agg Rok Materials (Division of Wapak Sand & Gravel Co.)
95	Franklin	Fn-6	IM-185	American Aggregates Corp.
96	Franklin	Fn-23	IM-183	American Aggregates Corp.
97	Franklin	Fn-14	IM-832	Big Walnut Sand & Gravel Co.
98	Franklin	Fn-52	IM-191	J. P. Sand & Gravel Co.
99	Franklin	Fn-54	IM-847	L. & M. Excavators, Inc.
100	Franklin	Fn-11	IM-234	Mason's Sand & Gravel Co.
101	Franklin	Fn-24	IM-266	S & S Aggregate, Inc.
102	Franklin	Fn-43	IM-188	Olen Corp.
105	Gallia	Ga-243	IM-238	M. T. Epling Co.
106	Gallia	Ga-245		M. T. Epling Co.
107	Gallia	Ga-507	IM-23	Keener Sand & Clay Co.
108	Geauga	Gea-29	IM-215	Haueter Sand & Gravel, Inc.
109	Geauga	Gea-35	IM-321	Teague Gravel Co., Inc.
110	Greene	Ge-33	IM-379	American Aggregates Corp.
112	Clark, Greene	Ge-4	IM-394	Hilltop Basic Resources, Inc.
115	Greene	Ge-36	IM-305	Phillips Sand & Gravel
117	Greene	Ge-10	IM-518	Xenia Sand, Gravel, & Asphalt Co.
118	Hamilton	Hmn-37	IM-170	American Aggregates Corp.
119	Hamilton	Hmn-AAC	IM-716	American Aggregates Corp.
120	Hamilton	Hmn-54	IM-710	Ashcraft Sand & Gravel, Inc.
121	Hamilton	Hmn-44	IM-120	Barrett Paving Materials, Inc.
123	Hamilton	Hmn-50	IM-205	James Bunnell, Inc.
124	Hamilton	Hmn-59	IM-815	James Bunnell, Inc.
126	Hamilton	Hmn-3	IM-137, IM-801	Dravo Basic Materials Co., Inc.

**NUMERICAL INDEX OF OPERATORS OF MINES
SHOWN ON 1990 MINERAL INDUSTRIES MAP OF OHIO, BY COMMODITY—Continued**

SAND AND GRAVEL—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
127	Hamilton	Hmn-5	IM-148	Dravo Basic Materials Co., Inc.
128	Hamilton	Hmn-11, Hmn-70	IM-133	Dravo Basic Materials Co., Inc.
131	Hamilton	Hmn-68	IM-747	Dravo Basic Materials Co., Inc.
135	Hamilton	Hmn-17	IM-295	Harrison Sand & Gravel Co.
139	Hamilton	Hmn-10	IM-226	Rack Sand, Inc.
141	Hamilton	Hmn-28	IM-353	The Gravel Co.
142	Hamilton	Hmn-60	IM-761	Watson Gravel, Inc.
143	Hamilton	Hmn-42	IM-823	Welch Sand & Gravel, Inc.
144	Hamilton	Hmn-48	IM-220	Welch Sand & Gravel, Inc.
147	Henry	Hy-5		Gerken Materials, Inc.
150	Hocking	Hg-296	IM-559	Hocking County Engineer
151	Hocking	Hg-262	IM-41	Hocking Valley Concrete, Inc.
152	Hocking	Hg-301	IM-458	Muskingum River Gravel Co.
153	Holmes	Hs-82	IM-707	Menuz Bros. Sand & Gravel, Inc.
154	Holmes	Hs-511	IM-345	Feikert Sand & Gravel, Inc.
157	Huron	Hrn-1	IM-550	Rogers Group, Inc. (dba Norwalk Sand & Gravel)
159	Knox	Kx-13	IM-343	S & S Aggregate, Inc.
160	Knox	Kx-7	IM-235	Goodwin Sand & Gravel, Inc.
161	Knox	Kx-16	IM-793	Olen Corp.
162	Knox	Kx-5	IM-884	Mickley Gravel Co.
163	Knox	Kx-3	IM-300	Sant Sand & Gravel, Inc.
165	Knox	Kx-15	IM-967	Small's Sand & Gravel, Inc.
166	Lake	Lke-7	IM-162	R. W. Sidley, Inc.
167	Lawrence	Le-430	IM-844	Becky Lane Trucking, Inc.
170	Lawrence	Le-426	IM-856	Burlington Sand & Gravel Co.
173	Licking	Lg-8	IM-271	Newark Asphalt Co.
174	Licking	Lg-2	IM-184	American Aggregates Corp.
176	Licking	Lg-31	IM-246	Dry Creek Gravel Co.
177	Licking	Lg-DC	IM-354	Dry Creek Gravel Co.
179	Licking	Lg-10	IM-217	Van Wey Sand & Gravel, Inc.
180	Licking	Lg-15		Walter's Gravel
181	Licking	Lg-38	IM-695	York Road Gravel Co.
182	Logan	Lgn-31	IM-454	C. E. Duff & Son, Inc.
183	Logan	Lgn-39	IM-887	C. E. Duff & Son, Inc.
189	Logan	Lgn-6	IM-459	Neer's Sand & Gravel
190	Logan	Lgn-38	IM-881	Cummins Family Contracting
191	Lorain	Ln-12	IM-731	Belu & Son Paving, Inc.
195	Lucas	Ls-13	IM-492	Seaway Sand & Stone, Inc.
196	Mahoning	Mg-S	IM-808	Solomon's Mines
197	Marion	Mn-16	IM-171	Scioto Sand & Gravel
198	Marion	Mn-4	IM-290	Penry Stone Co.
200	Marion	Mn-10	IM-196	Union Aggregates Co.
201	Marion	Mn-12	IM-197	Union Aggregates Co.
203	Medina	Ma-20	IM-448	Baker Sand, Inc.
205	Medina	Ma-12	IM-516	Ramsier Sand & Gravel
206	Medina	Ma-22	IM-425, IM-650, IM-651	Seville Sand & Gravel, Inc.
208	Medina	Ma-16		Silchuk Gravel Co.
209	Meigs	Ms-205	IM-30	Dravo Basic Materials Co., Inc.
210	Meigs	Ms-295		Humphrey Farms
211	Meigs	Ms-301	IM-619	Meigs County Commissioners
212	Meigs	Ms-298	IM-32	Richards & Son, Inc.
216	Miami	Mi-6	IM-356	American Aggregates Corp.
217	Miami	Mi-501		New Carlisle Sand & Gravel Co.
219	Miami	Mi-3	IM-462	American Aggregates Corp.
220	Miami	Mi-8	IM-355	American Aggregates Corp.
221	Miami	Mi-9	IM-408	Wise Gravel
222	Miami	Mi-4	IM-472	Fenner Sand & Gravel, Inc.
223	Montgomery	My-33	IM-361	American Aggregates Corp.
224	Montgomery	My-66	IM-677	American Aggregates Corp.
225	Montgomery	My-65	IM-594	Broadway Sand & Gravel, Inc.
228	Montgomery	My-67	IM-725	Carpenter's Excavating
229	Montgomery	My-68	IM-646	H & H Utilities Co.
232	Montgomery	My-19	IM-401	Hilltop Basic Resources, Inc.

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SAND AND GRAVEL—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
233	Montgomery	My-52	IM-348	Miller Bros. Gravel, Inc.
235	Montgomery	My-49	IM-370	Northmont Sand & Gravel Co.
236	Montgomery	My-55	IM-571	Partin Sand & Gravel
238	Montgomery	My-61	IM-468	Tipp Stone Co., Inc.
239	Montgomery	My-41	IM-360	Weidle Sand & Gravel, Inc.
240	Morgan	Mon-588	IM-35	Chesterhill Stone Co.
241	Morgan	Mon-599		Huck Farms
242	Morrow	Mw-10	IM-258	Chesterville Sand & Gravel Co., Inc.
243	Muskingum	Mum-863	IM-264	Cox Gravel Co., Inc.
244	Muskingum	Mum-799	IM-317	Cox Gravel Co., Inc.
245	Muskingum	Mum-736	IM-804	Muskingum River Gravel Co.
247	Muskingum	Mum-228	IM-421	Muskingum River Gravel Co.
248	Muskingum	Mum-216	IM-689	Salt Creek Materials, Inc.
251	Pickaway	Pky-1	IM-409, IM-428, IM-668	American Aggregates Corp.
252	Pike	Pke-26	IM-142	Valley Materials Co.
253	Pike	Pke-23	IM-242	Chattin Concrete
254	Pike	Pke-30	IM-786	Gregory Materials Co.
255	Pike	Pke-24	IM-222	Standard Slag Co.
256	Portage	Pe-50	IM-96	Beck Sand & Gravel, Inc.
257	Portage	Pe-15	IM-104	Karl Brugmann Sand & Gravel, Inc.
258	Portage	Pe-9	IM-119	Oscar Brugmann Sand & Gravel, Inc.
259	Portage	Pe-17	IM-123	Charlestown Sand & Gravel, Inc.
260	Portage	Pe-84	IM-868	Aurora Sand & Gravel, Inc.
261	Portage	Pe-45	IM-139	R. A. Cruise Sand & Gravel, Inc.
262	Portage	Pe-56	IM-127	Hilltop Aggregate, Inc.
264	Portage	Pe-10	IM-138	Hugo Sand Co.
265	Portage	Pe-63	IM-82	Jefferson Materials Co.
266	Portage	Pe-83	IM-179	Karg Sand & Gravel Co.
268	Portage	Pe-40	IM-190	Lakeside Sand & Gravel Co.
272	Portage	Pe-39	IM-174	Miller Sand & Gravel Co.
273	Portage	Pe-85	IM-700	Northern Ohio Materials, Inc.
274	Portage	Pe-60	IM-78	Schloss Paving Co.
275	Portage	Pe-18	IM-193	Sober Sand & Gravel Co.
276	Portage	Pe-36	IM-90	Solon Excavators Sand & Gravel, Inc.
277	Portage	Pe-68	IM-143, IM-687	Standard Slag Co.
278	Portage	Pe-SS1	IM-660	Standard Slag Co.
280	Portage	Pe-64	IM-229	Rainbow Sand & Gravel, Inc.
281	Portage	Pe-59	IM-210	S & S Aggregate, Inc.
282	Portage	Pe-67	IM-202	S & S Aggregate, Inc.
284	Preble	Pre-7	IM-306	Southern Ohio Aggregates
285	Preble	Pre-4	IM-477	Wysong Gravel Co.
286	Preble	Pre-6	IM-478	Wysong Gravel Co.
287	Richland	Rd-4	IM-279	D. H. Bowman & Sons, Inc.
289	Richland	Rd-18	IM-670	Ganges Gravel
290	Richland	Rd-14	IM-436	John L. Garber Materials, Inc.
297	Ross	Rs-26	IM-922	Elm Spring Farm
298	Ross	Rs-24	IM-735	Haubeil & Sons Asphalt & Materials, Inc.
303	Scioto	So-98	IM-474	E. E. Blair Construction Co.
304	Scioto	So-83	IM-211	Cunningham Asphalt Paving, Inc.
305	Scioto	So-78		Schilling Contractors, Inc.
306	Scioto	So-79	IM-221	Standard Slag Co.
310	Shelby	Shy-12	IM-528	Fleckenstein Farm Gravel Pit
311	Shelby	Shy-17	IM-389	Miami River Stone Co.
312	Shelby	Shy-13	IM-412	Sidney Sand & Gravel Co.
314	Shelby	Shy-11	IM-743	Spring Creek Corp.
315	Shelby	Shy-18	IM-388	Spring Creek Corp.
316	Stark	Sk-N	IM-156	Northern Ohio Paving Co.
318	Stark	Sk-681	IM-164	Canton Aggregate
319	Stark	Sk-689	IM-173	Canton Aggregate
320	Stark	Sk-694	IM-858	A. J. Diana Sons, Inc.
323	Stark	Sk-688	IM-763	Heiser Sand & Gravel
325	Stark	Sk-607	IM-102	Massillon Washed Gravel Co.
326	Stark	Sk-165	IM-192, IM-781	Oster Sand & Gravel, Inc.
327	Summit	St-52	IM-900	Flesher Sand & Gravel, Inc.

**NUMERICAL INDEX OF OPERATORS OF MINES
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SAND AND GRAVEL—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
328	Summit	St-39	IM-983	Lerkis Asphalt Co., Inc.
330	Summit	St-46	IM-557	H. M. Miller Construction Co.
333	Summit	St-24	IM-239	Riverside Sand & Gravel Co., Inc.
334	Summit	St-9	IM-167	Rubber City Sand & Gravel Co.
335	Summit	St-26	IM-803	Spring Valley Investments, Inc.
336	Summit	St-44	IM-178	S & S Aggregate, Inc.
337	Summit	St-29	IM-203	American Sand & Gravel
340	Ashtabula, Trumbull	TI-12	IM-131	Samco, Inc.
342	Tuscarawas	Ts-1852	IM-75	Oster Sand & Gravel, Inc.
343	Tuscarawas	Ts-1826	IM-88	Soehnen Bros. Sand & Gravel, Inc.
344	Tuscarawas	Ts-1771	IM-77	Spring Industries, Inc.
345	Tuscarawas	Ts-1788	IM-73	Spring Industries, Inc.
346	Tuscarawas	Ts-111	IM-55	Stewart & Reichman, Inc.
347	Tuscarawas	Ts-69	IM-51	Stocker Sand & Gravel Co.
348	Tuscarawas	Ts-125	IM-50	Stocker Sand & Gravel Co.
349	Warren	Wan-38	IM-615	American Aggregates Corp.
352	Warren	Wan-41	IM-629	Dravo Basic Materials Co., Inc., Carl E. Oeder & Sons Sand & Gravel
356	Warren	Wan-47	IM-846	C & S Contractors, Inc.
357	Warren	Wan-8	IM-240	L & I Trucking & Construction, Inc.
363	Warren	Wan-10	IM-465	Watson Gravel, Inc.
364	Washington	Wn-55	IM-669	Beverly Slag Co.
365	Washington	Wn-508	IM-57	Briggs Sand & Gravel, Inc.
366	Washington	Wn-56	IM-857	Chesterhill Stone Co.
367	Washington	Wn-38	IM-701	Muskingum River Gravel Co.
369	Washington	Wn-510	IM-25	Trout Sand & Gravel Co.
370	Washington	Wn-43	IM-61	Union Slag Corp.
371	Washington	Wn-44	IM-63	Union Slag Corp.
372	Wayne	We-11	IM-547	Prairie Lane Sand & Gravel Co.
373	Wayne	We-7	IM-471	Rupp Construction, Inc.
374	Wayne	We-15	IM-398	Zollinger Sand & Gravel Co.
375	Williams	Ws-6	IM-497	Stoneco, Inc.
376	Williams	Ws-9	IM-498	Stoneco, Inc.
377	Defiance, Williams	Ws-11	IM-509, IM-661	Weber Sand & Gravel, Inc.
378	Williams	Ws-14	IM-614	Dennis Winzeler
379	Wyandot	Wt-4	IM-520	Precision Sand & Gravel
380	Wyandot	Wt-5, Wt-15	IM-376	National Lime & Stone Co.
381	Wyandot	Wt-18	IM-551	National Lime & Stone Co.
382	Wyandot	Wt-17	IM-604	Kirby's Sand & Gravel, Inc.
384	Summit	St-53	IM-874	Portage Lakes Sand & Gravel Co.
385	Clark	Ck-501	IM-340	Demmy Construction, Inc.
386	Stark	Sk-203	IM-654	American Sand & Gravel
387	Portage	Pe-ASG	IM-212	American Sand & Gravel
388	Lawrence	Le-445	IM-928	D & D Sand Bank
389	Tuscarawas	Ts-1976	IM-941, IM-942	Benco Leasing, Inc.
390	Miami	Mi-T	IM-696	Barrett Paving Materials, Inc.
391	Warren	Wan-B	IM-679	D & L Browning Excavating, Inc.
394	Ashtabula	Asa-S	IM-853	Joe Simak & Sons Trucking, Inc.
395	Scioto	So-100	IM-760	Scioto Valley Resources
396	Muskingum	Mum-261	IM-957	Lazy Acre Farms, Inc.
397	Tuscarawas	Ts-1977	IM-692	Heiser Stone Co.
400	Licking	Lg-502	IM-956	Dry Creek Gravel Co.
401	Fairfield	Fd-14	IM-933	Paul D. Beery Trucking Co.
403	Greene	Ge-40	IM-923	Donald Martin Contracting
404	Greene	Ge-42	IM-954	American Aggregates Corp.
405	Greene	Ge-32	IM-400	American Aggregates Corp.
406	Hardin	Hdn-5	IM-907	Crates Excavating
407	Hamilton	Hmn-69	IM-969	Whitewater Aggregates, Inc.
408	Knox	Kx-17	IM-968	Small's Sand & Gravel, Inc.
409	Richland	Rd-20	IM-617	Bolin & Bartley, Inc.

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SAND AND GRAVEL—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
410	Muskingum	Mum-267	IM-914	Luburgh, Inc.
411	Logan	Lgn-40	IM-996	Cooper Sand & Gravel
412	Ashland	Ald-15	IM-944	Young's Sand & Gravel Co.
413	Ashtabula	Asa-18	IM-949	North Ridge Materials
414	Franklin	Fn-56	IM-980	S & S Aggregate, Inc.
415	Geauga	Gea-9	IM-132	Soltis Sand & Gravel
416	Holmes	Hs-96	IM-997	Spring Run Farm & Gravel
417	Huron	Hrn-16	IM-975	Erie Blacktop, Inc.
419	Licking	Lg-504	IM-991	Gary Roberts Excavating
420	Logan	Lgn-36	IM-1007	C. E. Duff & Son, Inc.
422	Lucas	Ls-26	IM-1016	Maumee Haulers & Excavating, Inc.
423	Marion	Mn-F	IM-990	Fleming Construction Co., Inc.
424	Monroe	Me-508	IM-1000	B & D Paving Co.
425	Muskingum	Mum-269	IM-1009	Salt Creek Materials, Inc.
427	Summit	St-54	IM-934	R & S, Inc.
428	Tuscarawas	Ts-2001	IM-1004	Newton Asphalt
429	Warren	Wan-46	IM-679	Ernst Material Service, Inc.
430	Warren	Wan-50	IM-1006	L & I Natural Resources, Inc.
431	Warren	Wan-52	IM-994	Carl E. Oeder & Sons Sand & Gravel
432	Washington	Wn-54	IM-383	Atlas Towing Co.
434	Hamilton	Hmn-56	IM-631	Barrett Paving Materials, Inc.
435	Stark	Sk-173	IM-879	Allied Corp., Inc.
437	Clark	Ck-7	IM-449	City of Springfield
438	Coshocton	Cn-828	IM-1026	William Albert, Inc.
440	Gallia	Ga-626	IM-1046	Cremeans Concrete & Supply
441	Greene	Ge-38	IM-333	Watson Gravel, Inc.
442	Geauga	Gea-39	IM-1104	B-M Machine Co.
443	Geauga	Gea-40	IM-977	Solon Excavators Sand & Gravel, Inc.
444	Logan	Lgn-12	IM-1193	C. E. Duff & Son, Inc.
446	Miami	Mi-12	IM-467	Tipp Stone Co., Inc.
447	Miami	Mi-504	IM-1032	Stillwater Sand & Gravel, Inc.
448	Muskingum	Mum-262	IM-422	Muskingum River Gravel Co.
449	Muskingum	Mum-899		Cox Gravel Co., Inc.
451	Perry	Pe-89		Green Oaks Potting Products
452	Ross	Rs-M	IM-114	Muskingum River Gravel Co.
453	Stark	Sk-241	IM-582	Standard Slag Co.
454	Stark	Sk-242	IM-466	Earth & Wood Landscape Supplies, Inc.
455	Stark	Sk-243	IM-908	American Sand & Gravel
456	Wood	Wd-13	IM-998	G. M. Sader Excavating & Paving, Inc.
457	Ashtabula	Asa-13		Fred J. Dreslinski
458	Athens	As-595	IM-1083	Cochran Transportation Services, Inc.
459	Athens	As-W	IM-979	Weber Aggregates
460	Butler	Br-S	IM-1053	Southern Ohio Aggregates, Inc.
461	Clark	Ck-B	IM-1100	Barrett Paving Materials, Inc.
462	Clark	Ck-D	IM-1038	Demmy Construction, Inc.
463	Columbiana	Ca-K	IM-1108	Kelly Coal Co.
464	Columbiana	Ca-U	IM-999	United Builders Distributing Corp.
465	Franklin	Fn-58	IM-1023	Olen Corp.
466	Gallia	Ga-O	IM-1028	Donald Ours
467	Hamilton	Hmn-AS	IM-1106	Allgeier & Son, Inc.
468	Hamilton	Hmn-D	IM-1079	Dravo Basic Materials Co., Inc.
469	Hardin	Hdn-C	IM-1081	Crates Excavating
470	Holmes	Hs-J	IM-1043	Jones Sand & Gravel Co.
471	Lucas	Ls-AI	IM-1058	Atlantic Investment Co.
472	Lucas	Ls-G	IM-1090	H. T. Griffin Excavating, Inc.
473	Lucas	Ls-SS	IM-1069	Seaway Sand & Stone, Inc.
474	Madison	Mdn-T	IM-1063	Tuffco Sand & Gravel, Inc.
475	Mahoning	Mg-630	IM-1091	Dave Sugar, Inc.
476	Mahoning	Mg-B	IM-1008	Ray Blum Mining
477	Montgomery	My-A	IM-1012	American Aggregates Corp.
478	Morgan	Mon-CS	IM-1105	Chesterhill Stone Co.
479	Pickaway	Pky-7	IM-1067	Darby Gravel
480	Pickaway	Pky-H	IM-1039	William A. Hoffman, Jr.
481	Pickaway	Pky-R	IM-993	Richards Farms, Inc.

**NUMERICAL INDEX OF OPERATORS OF MINES
SHOWN ON 1990 MINERAL INDUSTRIES MAP OF OHIO, BY COMMODITY—Continued**

SAND AND GRAVEL—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
482	Portage	Pe-61	IM-1064	Red Brush Peat Co.
483	Portage	Pe-92	IM-522	Don Wartko Construction, Inc.
484	Portage	Pe-J	IM-1099	Johnson Rd. Sand & Gravel
485	Portage	Pe-S	IM-1082	Solon Excavators Sand & Gravel, Inc.
486	Portage	Pe-SE	IM-1096	Solon Excavators Sand & Gravel, Inc.
487	Portage	Pe-SS2	IM-1047	Standard Slag Co.
488	Preble	Pre-9	IM-1095	Loxley Aggregates, Inc.
489	Richland	Rd-L	IM-1086	Carroll Lifer Excavating, Inc.
490	Ross	Rs-27	IM-1098	Chillicothe Sand & Gravel Co.
491	Ross	Rs-H	IM-1052	Haubeil & Sons Asphalt & Materials, Inc.
492	Ross	Rs-VC	IM-1085	Van Camp Contracting Co.
493	Shelby	Shy-S	IM-1005	Sidney Sand & Gravel Co.
494	Shelby	Shy-SC	IM-1018	Spring Creek Gravel Co., Inc.
495	Stark	Sk-M	IM-1031	Massillon Materials, Inc.
496	Summit	St-55	IM-932	Alden Sand & Gravel Co.
497	Summit	St-56	IM-1073	M. & G. Supply Co.
498	Summit	St-L	IM-1027	Lerkis Sand & Gravel Co.
499	Trumbull	Tr-K	IM-1101	Kleese Development Associates, Inc.
500	Tuscarawas	Ts-2018	IM-1076	Zink Petroleum Corp. (dba State Rte. 416 Sand & Gravel)
501	Warren	Wan-M	IM-728, IM-1065	Morrow Gravel Co.
502	Warren	Wan-M1	IM-1051	Morrow Gravel Co.
503	Warren	Wan-M2	IM-837	Morrow Gravel Co.
504	Washington	Wn-1007	IM-1042	Mack Williams Blacktop Co., Inc.
505	Washington	Wn-Wn	IM-989	Washington County Engineer
506	Williams	Ws-T	IM-1022	Takacs Excavating
507	Gallia	Ga-507	IM-1074	Cedar Heights Clay Co.

SANDSTONE/CONGLOMERATE ▼

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
1	Carroll	Cl-102	IM-278	Conotton Valley Quarries Co.
3	Columbiana	Ca-855	IM-891	Beaver Creek Resources, Inc.
4	Coshocton	Cn-13	IM-397	Briar Hill Stone Co.
5	Coshocton	Cn-659	IM-232	Briar Hill Stone Co.
6	Coshocton	Cn-686	IM-504	Briar Hill Stone Co.
7	Coshocton	Cn-692	IM-294	Briar Hill Stone Co.
8	Coshocton	Cn-695	IM-402	Briar Hill Stone Co.
13	Cuyahoga	Cya-42	IM-686	Boyas Excavating, Inc.
14	Erie	Ee-21	IM-416	Cleveland Quarries Co.
17	Geauga	Gea-3	IM-89	Best Sand Corp.
18	Geauga	Gea-1	IM-163	R. W. Sidley, Inc.
19	Holmes	Hs-49	IM-418	Briar Hill Stone Co.
20	Huron	Hrn-8	IM-268	Mesenburg Bros., Inc.
23	Knox	Kx-12	IM-445	Briar Hill Stone Co.
24	Knox	Kx-1	IM-269	Central Silica Co.
27	Lorain	Ln-3	IM-415	Cleveland Quarries Co.
30	Mahoning	Mg-62	IM-599	Gwin Contracting Co.
31	Perry	Py-202	IM-14	Central Silica Co.
34	Ross	Rs-16	IM-172	Southern Silica, Inc.
35	Scioto	So-47	IM-251	Taylor Stone Co., Inc.
36	Scioto	So-48	IM-140	Waller Bros. Stone Co.
37	Scioto	So-76	IM-141	Waller Bros. Stone Co.
38	Scioto	So-82	IM-158	Waller Bros. Stone Co.
40	Trumbull	Tr-13	IM-777	Hard Rocks, Inc.
41	Tuscarawas	Ts-1818	IM-9	Kimble Clay & Limestone Co.
42	Tuscarawas	Ts-1660	IM-68	U.S. Silica Co.
43	Washington	Wn-45	IM-125	Alan Stone Co., Inc.
44	Coshocton	Cn-815	IM-939	Briar Hill Stone Co.
45	Pike	Pke-31	IM-835	Schrader Sand & Gravel
46	Coshocton	Cn-809	IM-909	Briar Hill Stone Co.
47	Columbiana	Ca-970	IM-1024	M & M Builders Supply Co.
48	Perry	Py-344	IM-1014	Central Silica Co.
49	Summit	St-24	IM-239	Riverside Sand & Gravel Co., Inc.

NUMERICAL INDEX OF OPERATORS OF MINES
SHOWN ON 1990 MINERAL INDUSTRIES MAP OF OHIO, BY COMMODITY—Continued

SHALE/CLAY ☐

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
1	Ashland	Ald-1	IM-334	London Tile Co.
2	Auglaize	Ae-7		Sandkuhl Tile Co., Inc.
4	Columbiana	Ca-505	IM-13	Ferris Coal Co., Inc.
5	Columbiana	Ca-205	IM-74	Summitville Tiles, Inc.
6	Coshocton	Cn-787	IM-610	General Clay Products Corp.
7	Cuyahoga	Cya-19	IM-95	Hydraulic Press Brick Co.
10	Greene	Ge-8	IM-364	Southwestern Portland Cement Co.
11	Harrison	Hn-152	IM-42	Bowerston Shale Co.
12	Hocking	Hg-205	IM-21	General Clay Products Corp.
17	Holmes	Hs-56		Clark Clay Co.
18	Holmes	Hs-77	IM-545	General Clay Products Corp.
19	Holmes	Hs-67	IM-768	Holmes Limestone Co.
21	Jackson	Jkn-1001	IM-19, IM-336	Cedar Heights Clay Co.
22	Jackson	Jkn-1007	IM-24	Cedar Heights Clay Co.
23	Jackson	Jkn-367	IM-774, D-0273, D-0286, D-0594	Waterloo Coal Co., Inc.
24	Lawrence	Le-440	IM-828, IM-902	American Olean Tile Co., Inc.
30	Lawrence	Le-308	IM-31	Kosmos Cement Co.
31	Licking	Lg-501	IM-257	Bowerston Shale Co.
34	Mahoning	Mg-608	IM-4	E.M.A.I. Corp.
36	Marion	Mn-7	IM-309	Glen-Gery Corp.
37	Medina	Ma-6	IM-455	General Clay Products Corp.
38	Muskingum	Mum-776	IM-256	Bowerston Shale Co.
39	Muskingum	Mum-24	IM-303	Columbia Portland Cement Corp.
41	Noble	Ne-66	IM-664	Towne Square Products
42	Paulding	Pg-1	IM-513	Lafarge Corp.
43	Perry	Py-296	IM-37	Dennis Clay Co.
45	Perry	Py-297	IM-850	Charles Kishler
46	Perry	Py-212	IM-58	Ludowici-Celadon Co.
52	Stark	Sk-663	IM-5	East Ohio Limestone Co.
56	Tuscarawas	Ts-1517	IM-46	Belden Brick Co.
57	Tuscarawas	Ts-1646	IM-44	Belden Brick Co.
58	Tuscarawas	Ts-1841	IM-45	Belden Brick Co.
59	Tuscarawas	Ts-1939	IM-47	Belden Brick Co.
60	Tuscarawas	Ts-1960	IM-48	Belden Brick Co.
63	Tuscarawas	Ts-1818	IM-9	Kimble Clay & Limestone Co.
64	Tuscarawas	Ts-1884	IM-6	L & M Mineral Co.
65	Tuscarawas	Ts-1914	D-0701	L & M Mineral Co.
66	Tuscarawas	Ts-1981	IM-741	L & M Mineral Co.
67	Tuscarawas	Ts-1557, Ts-1558	IM-52	Stone Creek Brick Co.
69	Tuscarawas	Ts-1928	IM-98	Sugarcreek Clay & Limestone, Inc.
70	Tuscarawas	Ts-538	IM-27	Zoar Mining Co.
71	Tuscarawas	Ts-540	IM-28	Zoar Mining Co.
73	Wyandot	Wt-7	IM-407	Claycraft Co.
74	Muskingum	Mum-D	IM-917	Dennis Clay Co.
76	Stark	Sk-235	IM-945	Holmes Limestone Co.
77	Tuscarawas	Ts-1982	IM-621	L & M Mineral Co.
78	Tuscarawas	Ts-1994	IM-985	Eberhart Coal, Inc.
79	Columbiana	Ca-947	IM-935	Dome Minerals, Inc.
81	Athens	As-594		Athens Hocking Reclamation Center
82	Ashtabula	Asa-14	IM-563	Janson Soil Service, Inc.
83	Perry	Py-336	IM-1040	Nutter Bros. Coal Co., Inc.
84	Tuscarawas	Ts-1998	D-0735	Eberhart Coal, Inc.
85	Tuscarawas	Ts-520	IM-214	Blue Jay Enterprises
86	Geauga	Gea-9	IM-132	Soltis Sand & Gravel
87	Athens	As-595	IM-1083	Cochran Transportation Services, Inc.
88	Coshocton	Cn-828	IM-1026	William Albert, Inc.
89	Erie	Ee-32	IM-1077	Speer Bros., Inc.
90	Greene	Ge-44		Southwestern Portland Cement Co.
91	Jackson	Jkn-CH	IM-1060	Cedar Heights Clay Co.
92	Lake	Lke-M	IM-1059	Mitchell Transport, Inc.

**NUMERICAL INDEX OF OPERATORS OF MINES
SHOWN ON 1990 MINERAL INDUSTRIES MAP OF OHIO, BY COMMODITY—Continued**

SHALE/CLAY—Continued

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
93	Lawrence	Le-B	IM-1072	Belville Mining Co., Inc.
94	Lawrence	Le-W	IM-1050	White Eagle Mining, Inc.
95	Lucas	Ls-E	IM-1075	Envirosafe Services of Ohio, Inc.
96	Ottawa	Oa-B	IM-1084	Browning-Ferris Industries of Ohio, Inc.
97	Perry	Py-S	IM-1080	Swingle Drilling, Inc.
98	Perry	Py-N	IM-1097	Nutter Bros. Coal Co., Inc.
99	Pike	Pke-26	IM-142	Valley Materials Co.
100	Portage	Pe-B	IM-1054	Beaver Excavating Co.
101	Preble	Pre-9	IM-1095	Loxley Aggregates, Inc.
102	Stark	Sk-HC	IM-1037	Hillcrest Coal, Ltd.
103	Tuscarawas	Ts-2024	IM-1087	Green Basin Coal, Inc.
104	Wood	Wd-13	IM-998	G. M. Sader Excavating & Paving, Inc.
105	Belmont	Bt-1109	IM-1089	Widmor Coal Co.
106	Columbiana	Ca-970	IM-1024	M & M Builders Supply Co.
107	Mahoning	Mg-EM	IM-1056	E.M.A.I. Corp.
108	Perry	Py-338	IM-1092	Dennis Clay Co.
109	Harrison	Hn-B	IM-1020	Bowerston Shale Co.
110	Hocking	Hg-G	IM-1013	General Clay Products Corp.
111	Holmes	Hs-96	IM-997	Spring Run Farm & Gravel
112	Muskingum	Mum-24	IM-830	Columbia Portland Cement Corp.
113	Perry	Py-D	IM-1070	Dennis Clay Co.
114	Richland	Rd-R	IM-1035	Richland Moulded Brick Co.
115	Ross	Rs-M	IM-1055	Mead Corp.

SALT □ □

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
1	Cuyahoga	Cya-30		Akzo Salt, Inc.
2	Lake	Lke-6		Morton International, Inc.
3	Licking	Lg-45		R. H. Penick Co.
4	Summit	St-9127		Akzo Salt, Inc.
5	Wayne	We-9129		Morton International, Inc.

GYPSUM ◆

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
1	Ottawa	Oa-2	IM-344	Celotex Corp.

PEAT ◇

<i>Map location number</i>	<i>County</i>	<i>State mine number</i>	<i>Division of Reclamation permit number</i>	<i>Name of operator</i>
1	Ashland	Ald-13		Mohican Organic Products, Inc.
2	Champaign	Cpn-9		Sphagnum Moss Peat Farm
4	Williams	Ws-17		Lingvai Peat Co.
7	Portage	Pe-89		Green Oaks Potting Products
8	Stark	Sk-242	IM-466	Earth and Wood Landscape Supplies, Inc.
9	Portage	Pe-61	IM-1064	Red Brush Peat Co.



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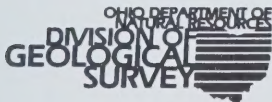
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DIVISION OF GEOLOGICAL SURVEY
Thomas M. Berg, Chief

MINERAL INDUSTRIES MAP OF OHIO

1990

COMPILED BY
DOUGLAS L. CROWELL,
SHERRY L. WEISGARBER,
AND
CLARK L. SCHEERENS

This map is based on operators listed in the 1990
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- MINES, QUARRIES, AND PREP PLANTS**
- Coal, underground
 - Coal, strip
 - Coal, prep plant
 - Gypsum
 - Limestone/dolomite
 - Peat
 - Salt, brine
 - Salt, rock
 - Sand and gravel
 - Sand and gravel dredging operation
 - Sandstone/conglomerate
 - Shale/clay

Locations are approximate. Numbers opposite symbols are map location numbers assigned to operators listed in the alphabetical directories of the Division of Geological Survey's *Report on Ohio mineral industries*. The operator of a mine or quarry may be determined from the directories by use of the map location commodity symbol, number, and county name. A list of operators by commodity and map location number is also provided.

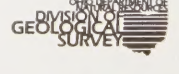
MINERAL INDUSTRIES MAP OF OHIO

1990

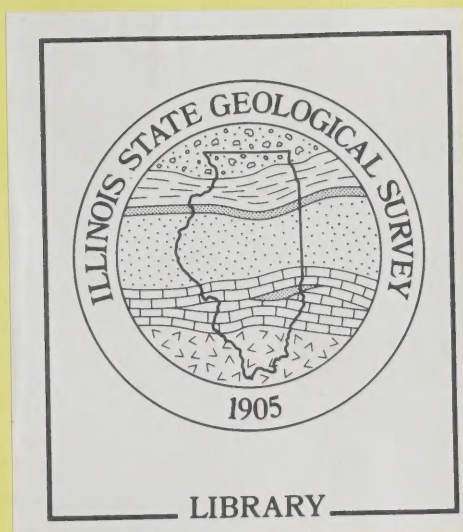
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CARTOGRAPHERS: MICHAEL R. LESTER
ROBERT L. STEWART



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